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BACON'S NEW ATLANTIS

BY

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LIFE OF BACON.

FRANCIS BACON was born on January 22, 1561, at York House, Strand. His father was Sir Nicholas Bacon, Lord Keeper of the Great Seal, and his mother Anne, daughter of Sir Antony Cooke, who had been tutor to Edward VI. Sir Nicholas Bacon was one of the ablest statesmen of Elizabeth's court, and his wife had received a much higher education than was at that period considered sufficient for a woman.

Francis was a delicate boy, a fact which, while keeping him from the more robust exertions of youth, tended to increase and develop the natural gravity of his manner, and accounts for his early bias to study. He was a keen observer of all that went on around him, but his attention was more particularly attracted to the consideration of natural science.

At the early age of twelve he entered Trinity College, Cambridge, and during his residence studied hard at the classics and the other subjects of the College curriculum. He acquired also at this time his dislike to the Aristotelian system of Philosophy, because it was, as he said, "only strong for disputations and contentions, but barren of works for the benefit of the life of man." To this dislike we owe the more important of Bacon's writings.

After three years' residence at Cambridge he went abroad in the train of Sir Amyas Paulet, who was ambassador to France. During his stay abroad he still continued his study, and was keen in his observation of natural phenomena. It was doubtless the intention of his father to find for Francis some position in the diplomatic world, but the somewhat sudden death of Sir Nicholas changed the whole current of his life. He returned to England and commenced a course of law at Gray's Inn, and in 1582 was admitted as an 'utter' barrister. Two years later he was returned to Parliament as a member for Melcombe Regis, and he continued to represent one constituency or another for over thirty years. He soon attracted notice by his ability, which at once gained for him the great respect of the House. Ben Jonson tells us that when he spoke "the only fear which everyone had was that he would end."

For many years Bacon's life was a struggle. He was poor, he was toiling at a profession in which his heart was not. His great desire was to receive some appointment which would secure for him a sufficient income, while allowing him time to prosecute his study of nature and her works, and to work out the great scheme of science which had been in his mind for years. He solicited the assistance of the Cecils; this was somewhat churlishly refused, the only preferment being the reversion of the Clerkship to the Star Chamber, which did not fall in for nearly twenty years. He was taken under the patronage of the Earl of Essex, then high in favour with the Queen, and in 1593 was strongly recommended

had offended Elizabeth. Equally futile was his candidature for the Solicitor-Generalship. To console his friend, Essex presented him with a small estate at Twickenham, which he afterwards sold for £1800.

During the autumn of 1597 an estrangement took place between the two friends, and two years later Essex set out on his disastrous expedition to Ireland. His return and his loss of the Queen's favour placed Bacon in a difficult position. He still retained a large amount of love and gratitude for his friend, and was ready to do what he could to restore him to royal favour, while, on the other hand, his future advancement depended upon his retaining the good opinion of those in authority. Endeavouring to act as a friend to both Queen and subject, he nearly lost the esteem of both, for Essex deemed him a half-hearted ally and a spy of the Queen, while Elizabeth was beginning to consider him a follower and supporter of Essex. Recognizing this Bacon reluctantly gave up the old friendship, and henceforward acted entirely for the Queen, so that when Essex made his mad attempt at insurrection, and was to be tried for it, Bacon took his place among the prosecuting counsel, and made two speeches against the prisoner.

This conduct has earned for Bacon a large amount of blame, and may have prompted Pope to call him "the wisest, brightest, *meanest* of mankind." The question is too wide to be discussed fully here.

On the accession of James, Bacon had hopes of advancement, hopes which were afterwards fulfilled. He was knighted and appointed King's Counsel. In 1605 he married Alice Barnham, the daughter of a

Cheapside merchant. "I have found an alderman's daughter, an handsome maiden, to my liking." His support of the King brought him, in 1607, the position of Solicitor-General, and after several years of hard work he became, in 1613, Attorney-General. The following year he was made Lord Keeper, and entered upon his office in great state. In 1618 he became Lord Chancellor, and was created Baron Verulam, and afterwards Viscount S. Albans. Posterity has, however, refused to recognize him by his correct titles, and has always called him "Lord Bacon."

He was now at the height of his power and the goal of his ambition—regarded by all as a wise, able, and upright man—when an event occurred which completely ruined him politically. The House of Commons appointed a Committee to report concerning the Courts of Justice, and one of the results was that the Chancellor was accused, on twenty-two counts, of bribery and corruption. He pleaded guilty. "I do plainly and ingenuously confess that I am guilty of corruption, and do renounce all defence." Yet, astounding as this appears, there is much to be said in extenuation of the offence. It was a common practice of the times; there were but four cases in which he had received presents before the cases were decided, and in those cases the acceptance of the money did not influence his judgment. Even those who charged him with receiving bribes admitted that he gave his decision against them. Of the thousands of verdicts given by him during his office not one was reversed.

Still the crime was a bad one; that the man who filled the highest office of English law should accept bribes

was an indelible disgrace. He was sentenced to pay a fine of £40,000, and to be imprisoned in the Tower during the King's pleasure. "I was," he said, "the justest judge that was in England these fifty years, but it was the justest censure in Parliament that was these two hundred years." The fine was remitted, and his imprisonment in the Tower lasted but two days. He retired to Gorhambury, and devoted the rest of his life to study and writing. In 1626 he caught a chill at Highgate, while testing the preservative power of snow by stuffing a fowl with it, was taken to the Earl of Arundel's residence, where he died on April 9th. He was buried in the Church of S. Michael at S. Albans.

Thus died one of the greatest men England has ever produced, (under the cloud of disgrace,) yet one who, conscious of his own power and of the value of his books, could write:—"My name and memory I leave to foreign nations, and to mine own country after some time is passed over."



BACON'S WORKS.

1. **The Essays**, published first in 1596, with additions in 1612, and again in 1625, are undoubtedly the best known of Bacon's works. They contain a vast amount of knowledge and shrewd advice, expressed in terse and condensed style. Many of the sayings they contain have become household words:—*Virtue is like a rich stone, best plain set; A crowd is not company, and faces are but a gallery of pictures, and talk but a tinkling cymbal, when there is no love; Reading maketh a full man, conference a ready man, and writing an exact man; etc.*

"It would be derogatory to a man of the slightest claim to polite letters were he unacquainted with the Essays."—*Hallam*.

2. **Instauratio Scientiarum.** The great work of Bacon's life was the introduction of a system of Philosophy which should deal with *things* not *words*, and which should be of practical utility. At a very early age he became dissatisfied with the Aristotelian system, which dealt with natural phenomena, (not as things from which *good* might be derived, but as subjects for elaborate discussions and mental recreation.) (The system before Bacon's time was largely deductive.) General laws were stated without any sure basis for their foundation; these laws, applied to facts and cases, provided scope for much scholarly discussion, which resulted in nothing. The philosophy was "no vineyard or olive ground, but an intricate wood of briars and thistles, from which those who lost themselves in it brought back only scratches and no food." ("Words and more words and nothing but words had been the fruit of all the most renowned sages of sixty generations.")

Now Bacon proceeded on quite a different plan. His work was to be inductive in principle. As many examples as possible were to be examined, as many experiments worked as practicable before a law was stated, and the object of the whole was to be the increasing of man's happiness and material prosperity. It was, to use his own expression, "*fruit*" which he sought. It was the multiplying of human enjoyment and the mitigating of human sufferings. "The art which Bacon taught was the art of inventing arts"; that is, (he made no great discoveries in science himself, but he pointed out *how*

they could be found, what were the proper roads to take, and what dangers were to be avoided.) That he was right in his ideas is sufficiently evidenced by the fact that they are now adopted by the whole world, and it is owing in a great extent to him that science stands where it does to-day. Macaulay, in speaking of his method of philosophy, says: "It has lengthened life; it has mitigated pain; it has extinguished diseases; it has increased the fertility of the soil; it has given new securities to the mariner; it has furnished new arms to the warrior; it has spanned great rivers and estuaries with bridges of form unknown to our fathers; it has guided the thunder-bolt innocuously from heaven to earth; etc. For it is a philosophy which never rests, which has never attained, which is never perfect. Its law is progress."

The great work planned by Bacon was as follows :

**Instauratio
Scientiarum.**

- | | |
|--|---|
| 1. <i>De Augmentis Scientiarum</i> (The increase of Knowledge).
A general summary of knowledge, noting gaps and deficiencies. This includes the <i>Advancement of Learning</i> . | { |
| 2. <i>Novum Organum</i>.
The new method. The new Logic,—Inductive Reasoning. | |
| 3. <i>Sylva Sylvarum</i>. Natural Philosophy and Natural History. The only points touched on were: <i>Winds, Life and Death, Density and Rarity, Sound and Hearing</i> . | |
| 4. <i>Scala Intellectus</i>. | |
| 5. <i>Prodomi</i>. | |
| 6. <i>Philosophia Secunda</i>. | |

Of these sections the first two were completed, the *Novum Organum* being by far the most important; four

NEW ATLANTIS.

A WORK UNFINISHED.

*Written by the Right Honourable Francis Lord Verulam,
Viscount St Albans.*

TO THE READER.

This fable my lord devised, to the end that he might exhibit therein a model or description of a college, instituted for the interpreting of nature, and the producing of great and marvellous works for the benefit of man, under the name of Solomon's House, or the College of the Six Days' Works. And even so far his lordship hath proceeded 5 as to finish that part. Certainly the model is more vast and high than can possibly be imitated in all things, notwithstanding most things therein are within men's power to effect. His lordship thought also in this present fable to have composed a frame of laws, or the best state or mould of a commonwealth ; but foreseeing it would be a 10 long work, his desire of collecting the natural history diverted him, which he preferred many degrees before it. This work of the New Atlantis (as much as concerned the English edition) his lordship designed for this place.

W. RAWLEY. 15

NEW ATLANTIS.

WE sailed from Peru, where we had continued for the space of one whole year, for China and Japan, by the South Sea, taking with us victuals for twelve months, and had good winds from the east, though soft and weak, for five months' space and more; but then the wind came about, and 20

settled in the west for many days, so as we could make little or no way, and were sometimes in purpose to turn back. But then again there arose strong and great winds from the south, with a point east, which carried us up, for all that we could do, towards the north ; by which time our victuals failed us, though we had made good spare of them. So that, finding ourselves in the midst of the greatest wilderness of waters in the world, without victuals, we gave ourselves for lost men, and prepared for death. Yet we
10 did lift up our hearts and voices to God above, "who sheweth his wonders in the deep," beseeching him of his mercy, that as in the beginning he discovered the face of the deep, and brought forth dry land, so he would now discover land to us, that we might not perish. And it came to pass
15 that the next day about evening we saw, within a kenning before us, towards the north, as it were, thicker clouds, which did put us in some hope of land ; knowing how that part of the South Sea was utterly unknown, and might have islands or continents that hitherto were not come to light.
20 Wherefore we bent our course thither, where we saw the appearance of land all that night ; and in the dawning of the next day we might plainly discern that it was a land flat to our sight, and full of boscage, which made it show the more dark : and after an hour and a half's sailing we entered
25 into a good haven, being the port of a fair city, not great indeed, but well built, and that gave a pleasant view from the sea. And we, thinking every minute long till we were on land, came close to the shore, and offered to land ; but straightways we saw divers of the people with bastons in
30 their hands, as it were forbidding us to land, yet without any cries or fierceness, but only as warning us off by signs that they made. Whereupon, being not a little discomfited, we were advising with ourselves what we should do. During
35 which time there made forth to us a small boat with about eight persons in it, whereof one of them had in his hand a tipstaff of a yellow cane, tipped at both ends with blue, who

made aboard our ship without any show of distrust at all. And when he saw one of our number present himself somewhat afore the rest, he drew forth a little scroll of parchment, somewhat yellower than our parchment, and shining like the leaves of writing-tables, but otherwise soft and flexible, and delivered it to our foremost man. In which scroll were written, in ancient Hebrew, and in ancient Greek, and in good Latin of the school, and in Spanish, these words, “Land ye not, none of you, and provide to be gone from this coast within sixteen days, except you have further time given 10 you : meanwhile, if you want fresh water, or victual, or help for your sick, or that your ship needeth repair, write down your wants, and you shall have that which belongeth to mercy.” This scroll was signed with a stamp of cherubim’s wings, not spread, but hanging downwards, and by them a 15 cross. This being delivered, the officer returned, and left only a servant with us to receive our answer. Consulting hereupon amongst ourselves, we were much perplexed. The denial of landing, and hasty warning us away, troubled us much. On the other side, to find that the people had 20 languages, and were so full of humanity, did comfort us not a little ; and, above all, the sign of the cross to that instrument was to us a great rejoicing, and, as it were, a certain presage of good. Our answer was in the Spanish tongue, “That for our ship it was well, for we had rather met with 25 calms and contrary winds rather than any tempests. For our sick, they were many, and in very ill case, so that if they were not permitted to land, they ran in danger of their lives.” Our other wants we set down in particular, adding, “That we had some little store of merchandise, which, if it 30 pleased them to deal for, it might supply our wants without being chargeable unto them.” We offered some reward in pistolets unto the servant, and a piece of crimson velvet to be presented to the officer ; but the servant took them not, nor would scarce look upon them ; and so left us, and went back 35 in another little boat which was sent for him.

About three hours after we had despatched our answer, there came towards us a person, as it seemed, of place. He had on him a gown, with wide sleeves of a kind of water-chamlet, of an excellent azure colour, far more glossy than ours; his under-apparel was green, and so was his hat, being in the form of a turban, daintily made, and not so huge as the Turkish turbans; and the locks of his hair came down below the brims of it. A reverend man was he to behold. He came in a boat, gilt in some part of it, with four persons more only in that boat, and was followed by another boat, wherein were some twenty. When he was come within a flight-shot of our ship, signs were made to us that we should send forth some to meet him upon the water: which we presently did in our ship's boat, sending the principal man amongst us, save one, and four of our number with him. When we were come within six yards of their boat, they called to us to stay, and not to approach further, which we did. And thereupon the man whom I before described stood up, and with a loud voice in Spanish, asked, "Are ye Christians?" We answered, "We were"; fearing the less because of the cross we had seen in the subscription. At which answer the said person lifted up his right hand towards heaven, and drew it softly to his mouth, which is the gesture they use when they thank God, and then said, "If you will swear, all of you, by the merits of the Saviour, that ye are no pirates, nor have shed blood, lawfully or unlawfully, within forty days past, you may have license to come on land. We said, "We were all ready to take that oath." Whereupon one of those that were with him, being, as it seemed, a notary, made an entry of this act. Which done, another of the attendants of the great person, who was with him in the same boat, after his lord had spoken a little to him, said aloud, "My lord would have you know that it is not of pride or greatness that he cometh not aboard your ship; but for that in your answer you declare that you have many sick amongst you, he was warned by

the conservator of health of the city that he should keep at a distance." We bowed ourselves towards him, and answered, "We were his humble servants ; and accounted for great honour and singular humanity towards us that which was already done ; but hoped well that the nature of 5 the sickness of our men was not infectious." So he returned ; and a while after came the notary to us aboard our ship, holding in his hand a fruit of that country, like an orange, but of colour between orange-tawny and scarlet, which casts a most excellent odour : he used it, as it seemeth, for a 10 preservative against infection. He gave us our oath, "By the name of Jesus and his merits"; and after told us that the next day, by six o'clock in the morning, we should be sent to, and brought to the Strangers'-House, so he called it, where we should be accommodated of things both for our 15 whole and for our sick. So he left us ; and when we offered him some pistolets, he, smiling, said, "He must not be twice paid for one labour"; meaning, as I take it, that he had salary sufficient of the state for his service ; for, as I after learned, they call an officer that taketh rewards "twice 20 paid." ;

The next morning early there came to us the same officer that came to us at first with his cane, and told us, "He came to conduct us to the Strangers'-House, and that he had prevented the hour, because we might have the whole day 25 before us for our business : for," said he, "if you will follow my advice, there shall first go with me some few of you and see the place, and how it may be made convenient for you ; and then you may send for your sick, and the rest of your number, which ye will bring on land." We thanked him, 30 and said, "That this care which he took of desolate strangers God would reward." And so six of us went on land with him ; and when we were on land he went before us, and turned to us and said, "He was but our servant and our guide." He led us through three fair streets, and all the 35 way we went there were gathered some people on both sides,

standing in a row, but in so civil a fashion, as if it had been not to wonder at us, but to welcome us ; and divers of them, as we passed by them, put their arms a little abroad, which is their gesture when they bid any welcome. The Strangers'-
5 House is a fair and spacious house, built of brick, of somewhat a bluer colour than our brick, and with handsome windows, some of glass, some of a kind of cambric oiled. He brought us first into a fair parlour above-stairs, and then asked us, "What number of persons we were, and how many sick ?" We
10 answered, "We were in all, sick and whole, one-and-fifty persons, whereof our sick were seventeen." He desired us to have patience a little, and to stay till he came back to us, which was about an hour after ; and then he led us to see the chambers which were provided for us, being in number
15 nineteen. They having cast it, as it seemeth, that four of those chambers, which were better than the rest, might receive four of the principal men of our company, and lodge them alone by themselves ; and the other fifteen chambers were to lodge us, two and two together. The
20 chambers were handsome and cheerful chambers, and furnished civilly. Then he led us to a long gallery, like a dorture, where he showed us all along the one side (for the other side was but wall and window) seventeen cells, very neat ones, having partitions of cedar-wood. Which gallery
25 and cells, being in all forty, many more than we needed, were instituted as an infirmary for sick persons. And he told us withal, that as any of our sick waxed well, he might be removed from his cell to a chamber ; for which purpose there were set forth ten spare chambers, besides
30 the number we spake of before. This done, he brought us back to the parlour, and lifting up his cane a little, as they do when they give any charge or command, said to us, "Ye are to know, that the custom of the land requireth that after this day and to-morrow, which we give you for
35 removing your people from your ship, you are to keep within doors for three days. But let it not trouble you,

nor do not think yourself restrained, but rather left to your rest and ease. You shall want nothing ; and there are six of our people appointed to attend you for any business you may have abroad." We gave him thanks with all affection and respect, and said, "God surely is manifested in this 5 land." We offered him also twenty pistolets; but he smiled, and only said, "What, twice paid ?" and so he left us.

Soon after our dinner was served in, which was right good viands, both for bread and meat, better than any collegiate diet that I have known in Europe. We had also drink of 10 three sorts, all wholesome and good; wine of the grape, a drink of grain, such as is with us our ale, but more clear; and a kind of cider made of a fruit of that country, a wonderful pleasing and refreshing drink. Besides, there were brought into us great store of those scarlet oranges for our 15 sick, which, they said, were an assured remedy for sickness taken at sea. There was given us also a box of small grey or whitish pills, which they wished our sick should take, one of the pills every night before sleep, which, they said, would hasten their recovery. 20

The next day, after that our trouble of carriage and removing of our men and goods out of our ship was somewhat settled and quiet, I thought good to call our company together, and when they were assembled said unto them, "My dear friends, let us know ourselves, and how it standeth 25 with us. We are men cast on land, as Jonas was out of the whale's belly, when we were as buried in the deep. And now we are on land, we are but between death and life; for we are beyond both the Old World and New; and whether ever we shall see Europe God only knoweth: it is a kind of 30 miracle hath brought us hither, and it must be little less that shall bring us hence. Therefore, in regard of our deliverance past, and our danger present and to come, let us look up to God, and every man reform his own ways. Besides, we are come here amongst a Christian people, full of 35 piety and humanity; let us not bring that confusion of face

upon ourselves as to show our vices or unworthiness before them. Yet there is more; for they have by commandment, though in form of courtesy, cloistered us within these walls for three days: who knoweth whether it be not to take some
5 taste of our manners and conditions; and if they find them bad, to banish us straightways; if good, to give us further time? For these men that they have given us for attendance may withal have an eye upon us. Therefore for God's love, and as we love the weal of our souls and bodies, let us
10 so behave ourselves as we may be at peace with God, and may find grace in the eyes of this people." Our company with one voice thanked me for my good admonition, and promised me to live soberly and civilly, and without giving any the least occasion of offence. So we spent our three days
15 joyfully, and without care, in expectation what would be done with us when they were expired; during which time we had every hour joy of the amendment of our sick, who thought themselves cast into some divine pool of healing, they mended so kindly and so fast.

20 The morrow after our three days were past, there came to us a new man that we had not seen before, clothed in blue as the former was, save that his turban was white, with a small red cross on the top; he had also a tippet of fine linen. At his coming in he did bend to us a little, and put his arms
25 abroad. We of our parts saluted him in a very lowly and submissive manner, as looking that from him we should receive sentence of life or death. He desired to speak with some few of us; whereupon six of us only stayed, and the rest avoided the room. He said, "I am by office governor of
30 this House of Strangers, and by vocation I am a Christian priest, and therefore am come to offer you my service both as strangers, and chiefly as Christians. Some things I may tell you, which I think you will not be unwilling to hear. The state hath given you license to stay on land for the space of
35 six weeks. And let it not trouble you if your occasions ask further time, for the law in this point is not precise; and I

do not doubt but myself shall be able to obtain for you such further time as shall be convenient. Ye shall also understand that the Strangers'-House is at this time rich and much beforehand, for it hath laid up revenue these thirty-seven years; for so long it is since any stranger arrived in 5 this part. And, therefore, take ye no care, the state will defray you all the time you stay, neither shall you stay one day less for that. As for any merchandise you have brought, ye shall be well used, and have your return either in merchandise, or in gold and silver; for to us it is all one. And 10 if you have any other request to make, hide it not, for ye shall find we will not make your countenance to fall by the answer ye shall receive. Only this I must tell you, that none of you must go above a karan [that is with them a mile and a half] from the walls of the city without special leave." 15 We answered, after we had looked awhile upon one another, admiring this gracious and parent-like usage, "That we could not tell what to say, for we wanted words to express our thanks, and his noble free offers left us nothing to ask. It seemed to us that we had before us a picture of our salva- 20 tion in heaven; for we, that were a while since in the jaws of death, were now brought into a place where we found nothing but consolations. For the commandment laid upon us, we would not fail to obey it, though it was impossible but our hearts should be inflamed to tread further upon this 25 happy and holy ground." We added, "That our tongues should first cleave to the roofs of our mouths ere we should forget either this reverend person, or this whole nation in our prayers." We also most humbly besought him to accept of us as his true servants, by as just a right as ever men on 30 earth were bounden, laying and presenting both our persons and all we had at his feet. He said, "He was a priest, and looked for a priest's reward, which was our brotherly love, and the good of our souls and bodies." So he went from us, not-without tears of tenderness in his eyes; and left us also 35 confused with joy and kindness, saying amongst ourselves,

"That we were come into a land of angels which did appear to us daily, and present us with comforts which we thought not of, much less expected."

The next day, about ten o'clock, the governor came to us
5 again, and after salutations said familiarly, "That he was come to visit us," and called for a chair, and sat him down: and being some ten of us (the rest were of the meaner sort, or else gone abroad), sat down with him. And when we were seated, he began thus, "We of this island of Bensalem
10 [for so they call it in their language] have this, that by means of our solitary situation, and the laws of secrecy which we have for our travellers, and our rare admission of strangers, we know well most part of the habitable world, and are ourselves unknown. Therefore, because he that
15 knoweth least is fittest to ask questions, it is more reason, for the entertainment of the time, that ye ask me questions than that I ask you." We answered, "That we humbly thanked him that he would give us leave so to do, and that we conceived, by the taste we had already, that there was no
20 worldly thing on earth more worthy to be known than the state of that happy land. But above all," we said, "since that we were met from the several ends of the world, and hoped assuredly that we should meet one day in the kingdom of heaven, for that we were both parts Christians, we desired
25 to know, in respect that land was so remote, and so divided by vast and unknown seas from the land where our Saviour walked on earth, who was the apostle of that nation, and how it was converted to the faith?" It appeared in his face that he took great contentment in this our question. He
30 said, "Ye knit my heart to you by asking this question in the first place, for it sheweth that you 'first seek the kingdom of heaven'; and I shall gladly and briefly satisfy your demand:—

"About twenty years after the ascension of our Saviour, it
35 came to pass that there was seen by the people of Renfusa, a city upon the eastern coast of our island, within night, the

night was cloudy and calm, as it might be some miles in the sea, a great pillar of light, not sharp, but in form of a column or cylinder, rising from the sea, a great way up towards heaven, and on the top of it was seen a large cross of light, more bright and resplendent than the body of the pillar : 5 upon which so strange a spectacle the people of the city gathered apace together upon the sands to wonder, and so after put themselves into a number of small boats to go nearer to this marvellous sight. But when the boats were come within about sixty yards of the pillar, they found 10 themselves all bound, and could go no further, yet so as they might move to go about, but might not approach nearer ; so as the boats stood all as in a theatre, beholding this sight as a heavenly sign. It so fell out that there was in one of the boats of the wise men of the Society of Solomon's House 15 (which house or college, my good brethren, is the very eye of this kingdom), who having awhile attentively and devoutly viewed and contemplated this pillar and cross, fell down upon his face, and then raised himself upon his knees, and lifting up his hands to heaven, made his prayers in this 20 manner :—

“ ‘Lord God of heaven and earth, thou hast vouchsafed of thy grace to those of our order to know thy works of creation, and the secrets of them, and to discern as far as appertaineth to the generations of men between divine 25 miracles, works of nature, works of art, and impostures and illusions of all sorts ! I do here acknowledge and testify before this people, that the thing we now see before our eyes is thy finger and a true miracle. And forasmuch as we learn in our books that thou never workest miracles but to 30 a divine and excellent end, for the laws of nature are thine own laws, and thou exceedest them not but upon good cause, we most humbly beseech thee to prosper this great sign, and to give us the interpretation and use of it in mercy, which thou dost in some part secretly promise by sending it unto 35 us.

" When he had made his prayer, he presently found the boat he was in moveable and unbound, whereas all the rest remained still fast; and taking that for an assurance of leave to approach, he caused the boat to be softly and with silence 5 rowed towards the pillar : but ere he came near it, the pillar and cross of light brake up, and cast itself abroad, as it were, into a firmament of many stars ; which also vanished soon after, and there was nothing left to be seen but a small ark or chest of cedar, dry, and not wet at all with water, though 10 it swam ; and in the fore-end of it, which was towards him, grew a small green branch of palm. And when the wise man had taken it with all reverence into his boat, it opened of itself, and there was found in it a book and a letter, both written in fine parchment, and wrapped in sindons of linen. 15 The book contained all the canonical books of the Old and New Testament, according as you have them, for we know well what the churches with you receive, and the Apocalypse itself ; and some other books of the New Testament which were not at that time written, were nevertheless in the 20 book. And for the letter, it was in these words :—

“ I, Bartholomew, a servant of the Highest, and apostle of Jesus Christ, was warned by an angel that appeared to me in a vision of glory, that I should commit this ark to the floods of the sea. Therefore I do testify and declare unto 25 that people where God shall ordain this ark to come to land, that in the same day is come unto them salvation, and peace, and goodwill from the Father, and from the Lord Jesus.’

“ There were also in both these writings, as well the book as the letter, wrought a great miracle, conformable to that of 30 the apostles in the original gift of tongues. For there being at that time in this land, Hebrews, Persians, and Indians, besides the natives, every one read upon the book and letter as if they had been written in his own language. And thus was this land saved from infidelity, as the remain of the old 35 world was from water, by an ark, through the apostolical and miraculous evangelism of St. Bartholomew.” And her

he paused, and a messenger came and called him forth from us. So this was all that passed in that conference.

The next day the same governor came again to us immediately after dinner, and excused himself, saying, "That the day before he was called from us somewhat abruptly, but 5 now he would make us amends, and spend some time with us, if we held his company and conference agreeable." We answered, "That we held it so agreeable and pleasing to us, as we forgot both dangers past and fears to come, for the time we heard him speak, and that we thought an hour spent 10 with him was worth ten years of our former life." He bowed himself a little to us, and after we were set again he said, "Well, the questions are on your part." One of our number said, after a little pause, "There was a matter we were no less desirous to know than fearful to ask, lest we might 15 presume too far; but encouraged by his rare humanity towards us, that we could scarce think ourselves strangers, being his vowed and professed servants, we would take the hardiness to propound it: humbly beseeching him, if he thought it not fit to be answered, that he would pardon it, 20 though he rejected it." We said, "We well observed those his words which he formerly spake, that this happy island where we now stood was known to few, and yet knew most of the nations of the world ; which we found to be true, con- 25 sidering they had the languages of Europe, and knew much of our state and business ; and yet we in Europe, notwithstanding all the remote discoveries and navigations of this last age, never heard any of the least inkling or glimpse of this island. This we found wonderful strange, for that all nations have interknowledge one of another, either by 30 voyage into foreign parts, or by strangers that come to them: and though the traveller into a foreign country doth commonly know more by the eye than he that stayeth at home can by relation of the traveller, yet both ways suffice to make a mutual knowledge in some degree on both parts. 35 But for this island, we never heard tell of any ship of theirs

that had been seen to arrive upon any shore of Europe, no, nor of either the East or West Indies, nor yet of any ship of any other part of the world that had made return from them. And yet the marvel rested not in this, for the situation of it, as his lordship said, in the secret conclave of such a vast sea, might cause it: but then, that they should have knowledge of the languages, books, affairs of those that lie such a distance from them, it was a thing we could not tell what to make of ; for that it seemed to us a condition and 10 property of divine powers and beings, to be hidden and unseen to others, and yet to have others open and as in a light to them." At this speech the governor gave a gracious smile, and said, "That we did well to ask pardon for this question we now asked, for that it imported as if we thought 15 this land a land of magicians, that sent forth spirits of the air into all parts to bring them news and intelligence of other countries." It was answered by us all in all possible humbleness, but yet with a countenance taking knowledge that we knew that he spake it but merrily, "That we were 20 apt enough to think there was somewhat supernatural in this island, but yet rather as angelical than magical. But to let his lordship know truly what it was that made us tender and doubtful to ask this question, it was not any such conceit, but because we remembered he had given a touch in 25 his former speech, that this land had laws of secrecy touching strangers." To this he said, "You remember it right ; and therefore in that I shall say to you, I must reserve some particulars, which it is not lawful for me to reveal ; but there will be enough left to give you satisfaction.

30 "You shall understand, that which perhaps you will scarce think credible, that about three thousand years ago, or somewhat more, the navigation of the world, especially for remote voyages, was greater than at this day. Do not think with yourselves that I know not how much it is 35 increased with you within these sixscore years ; I know it well ; and yet I say, greater then than now. Whether it

was that the example of the ark that saved the remnant of men from the universal deluge, gave men confidence to adventure upon the waters, or what it was, but such is the truth. The Phoenicians, and especially the Tyrians, had great fleets ; so had the Carthaginians their colony, which is 5 yet further west. Toward the east the shipping of Egypt and of Palestine was likewise great ; China also, and the great Atlantis, that you call America, which have now but junks and canoes, abounded then in tall ships. This island, as appeareth by faithful registers of those times, had then 10 fifteen hundred strong ships of great content. Of all this there is with you sparing memory, or none ; but we have large knowledge thereof.

“ At that time, this land was known and frequented by the ships and vessels of all the nations before named, and, 15 as it cometh to pass, they had many times men of other countries that were no sailors that came with them ; as Persians, Chaldeans, Arabians ; so as almost all nations of might and fame resorted hither, of whom we have some stirps and little tribes with us at this day. And for our 20 own ships, they went sundry voyages, as well to your straits, which you call the Pillars of Hercules, as to other parts in the Atlantic and Mediterranean Seas ; as to Pegu, in which is the same with Cambaline, and Quinzy upon the Oriental seas, as far as to the borders of East Tartary. 25

“ At the same time, and an age after or more, the inhabitants of the great Atlantis did flourish. For though the narration and description which is made by a great man, with you, of the descendants of Neptune planted there, and of the magnificent temple, palace, city, and hill, and the 30 manifold streams of goodly navigable rivers, which, as so many chains, environed the same sight and temple, and the several degrees of ascent, whereby men did climb up to the same, as if it had been a scala coeli, be all poetical and fabulous ; yet so much is true, that the said country of Atlantis, 35 as well as that of Peru, then called Coya, as that of Mexico,

then named Tyrambel, were mighty and proud kingdoms in arms, shipping, and riches ; so mighty, as at one time, or at least within the space of ten years, they both made two great expeditions ; they of Tyrambel through the Atlantic 5 to the Mediterranean Sea, and they of Coya, through the South Sea, upon this our island. And for the former of these, which was into Europe, the same author amongst you, as it seemeth, had some relation from the Egyptian priest whom he citeth, for assuredly such a thing there 10 was. But whether it were the ancient Athenians that had the glory of the repulse and resistance of those forces, I can say nothing ; but certain it is, there never came back either ship or man from that voyage. Neither had the other voyage of those of Coya upon us had better fortune, if 15 they had not met with enemies of greater clemency. For the king of this island, by name Altabin, a wise man and a great warrior, knowing well both his own strength and that of his enemies, handled the matter so, as he cut off their land-forces from their ships, and entoiled both their navy 20 and their camp with a greater power than theirs, both by sea and land, and compelled them to render themselves without striking stroke : and after they were at his mercy, contenting himself only with their oath that they should no more bear arms against him, dismissed them all in 25 safety. But the Divine revenge overtook not long after those proud enterprises ; for within less than the space of one hundred years, the great Atlantis was utterly lost and destroyed, not by a great earthquake as your man saith, for that whole tract is little subject to earthquakes, but 30 by a particular deluge or inundation, those countries having at this day far greater rivers, and far higher mountains to pour down waters, than any part of the old world. But it is true, that the same inundation was not deep ; not past forty foot in most places from the ground ; so that although 35 it destroyed man and beast generally, yet some few wild inhabitants of the wood escaped. Birds also were saved

by flying to the high trees and woods. For as for men, although they had buildings in many places higher than the depth of the water, yet that inundation, though it were shallow, had a long continuance, whereby they of the vale that were not drowned, perished for want of food, and other 5 things necessary. So as marvel you not at the thin population of America, nor at the rudeness and ignorance of the people ; for you must account your inhabitants of America as a young people, younger a thousand years at the least than the rest of the world, for that there was so much time 10 between the universal flood and their particular inundation. For the poor remnant of human seed which remained in their mountains, peopled the country again slowly by little and little ; and being simple and a savage people, not like Noah and his sons, which were the chief family of the earth, 15 they were not able to leave manners, arts, and civility to their posterity. And having likewise, in their mountainous habitations, been used, in respect of the extreme cold of those regions, to clothe themselves with the skins of tigers, bears, and great hairy goats that they have in those parts ; when, 20 after they came down into the valley, and found the intolerable heats which are there, and knew no means of lighter apparel, they were forced to begin the custom of going naked, which continueth at this day : only they take great pride and delight in the feathers of birds ; and this 25 also they took from those their ancestors of the mountains, who were invited unto it by the infinite flight of birds that came up to the high grounds while the waters stood below. So you see by this main accident of time we lost our traffic with the Americans, with whom, of all others, in regard they 30 lay nearest to us, we had most commerce. As for the other parts of the world, it is most manifest that in the ages following, whether it were in respect of wars, or by a natural revolution of time, navigation did everywhere greatly decay, and especially far voyages, the rather by the use of galleys 35 and such vessels as could hardly brook the ocean, were alto-

gether left and omitted. So then, that part of the intercourse which could be from other nations to sail to us, you see how it hath long since ceased, except it were by some rare accident, as this of yours. But now of the cessation
5 of that other part of intercourse, which might be by our sailing to other nations, I must yield you some other cause; for I cannot say, if I shall say truly, but our shipping for number, strength, mariners, pilots, and all things that appertain to navigation, is as great as ever; and therefore why
10 we should sit at home I shall now give you an account by itself, and it will draw nearer to give you satisfaction to your principal question.

"There reigned in this island, about nineteen hundred years ago, a king, whose memory of all others we most
15 adore, not superstitiously, but as a divine instrument, though a mortal man: his name was Solomona, and we esteem him as the lawgiver of our nation. This king had a large heart, inscrutable for good, and was wholly bent to make his kingdom and people happy. He therefore, taking
20 into consideration how sufficient and substantive this land was to maintain itself without any aid at all of the foreigner, being five thousand six hundred miles in circuit, and of rare fertility of soil in the greatest part thereof; and finding also the shipping of this country might be plentifully set on
25 work, both by fishing and by transports from port to port, and likewise by sailing unto some small islands that are not far from us, and are under the crown and laws of this state, and recalling into his memory the happy and flourishing estate wherein this land then was, so as it
30 might be a thousand ways altered to the worse, but scarce any one way to the better; thought nothing wanted to his noble and heroical intentions, but only, as far as human foresight might reach, to give perpetuity to that which was in his time so happily established; therefore amongst his
35 other fundamental laws of this kingdom he did ordain the interdicts and prohibitions which we have touching the

entrance of strangers, which at that time, though it was after the calamity of America, was frequent ; doubting novelties and commixture of manners. It is true, the like law against the admission of strangers without license is an ancient law in the kingdom of China, and yet continued 5 in use ; but there it is a poor thing, and hath made them a curious, ignorant, fearful, foolish nation. But our law-giver made his law of another temper. For, first, he hath preserved all points of humanity in taking order and making provision for the relief of strangers distressed, whereof you have tasted." At which speech, as reason was, we all rose up and bowed ourselves. He went on. "That king also—still desiring to join humanity and policy together, and thinking it against humanity to detain strangers here against their wills, and against policy, that they should 15 return and discover their knowledge of this state, he took this course. He did ordain, that of the strangers that should be permitted to land, as many, at all times, might depart as would, but as many as would stay should have very good conditions and means to live from the state. 20 Wherein he saw so far, that now in so many ages since the prohibition, we have memory not of one ship that ever returned, and but of thirteen persons only at several times that chose to return in our bottoms. What those few that returned may have reported abroad, I know not ; but you 25 must think, whatsoever they have said could be taken where they came but for a dream. Now for our travelling from hence into parts abroad, our lawgiver thought fit altogether to restrain it. So is it not in China, for the Chinese sail where they will, or can ; which sheweth that their law of 30 keeping out strangers is a law of pusillanimity and fear. But this restraint of ours hath one only exception, which is admirable, preserving the good which cometh by communicating with strangers, and avoiding the hurt ; and I will now open it to you. And here I shall seem a little to digress, 35 but you will, by-and-by, find it pertinent. You shall

understand, my dear friends, that amongst the excellent acts of that king, one above all hath the pre-eminence ; it was the erection and institution of an order or society, which we call Solomon's House, the noblest foundation, as
5 we think, that ever was upon the earth, and the lanthorn of this kingdom. It is dedicated to the study of the works and creatures of God. Some think it heareth the founder's name a little corrupted, as if it should be Solomona's House ; but the records write it as it is spoken. So as I take it to
10 be denominate of the king of the Hebrews, which is famous with you, and no stranger to us, for we have some parts of his works which with you are lost ; namely, that natural history which he wrote of all plants, 'from the cedar of Libanus to the moss that growtheth out of the wall,' and of
15 all things that have life and motion. This maketh me think that our king, finding himself to symbolize in many things with that king of the Hebrews which lived many years before him, honoured him with the title of this foundation.
And I am the rather induced to be of this opinion, for that
20 I find in ancient records this order or society is sometimes called Solomon's House, and sometimes the College of the Six Days' Work ; whereby I am satisfied that our excellent king had learned from the Hebrews that God had created the world, and all that therein is, within six days, and there-
25 fore he instituting that house for the finding out of the true nature of all things, whereby God might have the more glory in the workmanship of them, and men the more fruit in their use of them, did give it also that second name. But now, to come to our present purpose. When the king had
30 forbidden to all his people navigation in any part that was not under his crown, he made nevertheless this ordinance, that every twelve years there should be set forth out of this kingdom two ships appointed to several voyages ; that in either of these ships there should be a mission of three of the
35 fellows or brethren of Solomon's House, whose errand was only to give us knowledge of the affairs and state of those

countries to which they were designed, and especially of the sciences, arts, manufactures, and inventions of all the world ; and withal to bring unto us books, instruments, and patterns in every kind : that the ships after they had landed the brethren, should return, and that the brethren should stay 5 abroad till the new mission. The ships are not otherwise fraught than with store of victuals, and good quantity of treasure, to remain with the brethren for the buying of such things and rewarding of such persons as they should think fit. Now for me to tell you, how the vulgar sort of 10 mariners are contained from being discovered at land, and how they that must be put on shore for any time, colour themselves under the names of other nations, and to what places these voyages have been designed, and what places of rendezvous are appointed for the new missions, and the 15 like circumstances of the practice, I may not do it, neither is it much to your desire. But thus you see we maintain a trade, not for gold, silver, or jewels, nor for silks, nor for spices, nor any other commodity of matter, but only for God's first creature, which was light ; to have light, I say, 20 of the growth of all parts of the world."

And when he had said this he was silent, and so were we all ; for indeed we were all astonished to hear so strange things so probably told. And he, perceiving that we were willing to say somewhat, but had it not ready, in great 25 courtesy took us off, and descended to ask us questions of our voyage and fortunes ; and in the end concluded that we might do well to think with ourselves what time of stay we would demand of the state ; and bade us not to scant ourselves, for he would procure such time as we desired. 30 Whereupon we all rose up, and presented ourselves to kiss the skirt of his tippet ; but he would not suffer us, and so took his leave. But when it came once amongst our people, that the state used to offer conditions to strangers that would stay, we had work enough to get any of our men to 35 look to our ship, and to keep them from going presently to

the governor to crave conditions ; but with much ado we refrained them, till we might agree what course to take.✓

We took ourselves now for free men, seeing there was no danger of our utter perdition, and lived most joyfully, going
5 abroad, and seeing what was to be seen in the city and places adjacent within our tudder, and obtaining acquaintance with many of the city, not of the meanest quality, at whose hands we found such humanity, and such a freedom and desire to take strangers as it were into their bosom,
10 as was enough to make us forget all that was dear to us in our own countries ; and continually we met with many things right worthy of observation and relation ; as indeed, if there be a mirror in the world worthy to hold men's eyes, it is that country. One day there were two of our company
15 bidden to a feast of the family, as they call it ; a most natural, pious, and reverend custom it is, showing that nation to be compounded of all goodness. This is the manner of it : it is granted to any man that shall live to see thirty persons descended of his body alive together, and
20 all above three years old, to make this feast, which is done at the cost of the state. The father of the family, whom they call the Tirsan, two days before the feast, taketh to him three of such friends as he liketh to choose, and is assisted also by the governor of the city or place where
25 the feast is celebrated ; and all the persons of the family of both sexes are summoned to attend him. These two days the Tirsan sitteth in consultation concerning the good estate of the family. There, if there be any discord or suits between any of the family, they are compounded and
30 appeased ; there, if any of the family be distressed or decayed, order is taken for their relief, and competent means to live ; there, if any be subject to vice or take ill courses, they are reproved and censured. So likewise, direction is given touching marriages, and the courses of
35 life which any of them should take, with divers others the like orders and advices. The governor assisteth to the end,

to put in execution by his public authority the decrees and orders of the Tirsan, if they should be disobeyed, though that seldom needeth, such reverence and obedience they give to the order of nature. The Tirsan doth also then ever choose one man from amongst his sons to live in house 5 with him, who is called ever after the son of the vine : the reason will hereafter appear. On the feast-day, the father or Tirsan cometh forth, after divine service, into a large room where the feast is celebrated, which room hath an half-pace at the upper end. Against the wall, in the middle 10 of the half-pace, is a chair placed for him, with a table and carpet before it ; over the chair is a state made round or oval, and it is of ivy ; an ivy somewhat whiter than ours, like the leaf of a silver asp, but more shining, for it is green all winter. And the state is curiously wrought with silver 15 and silk of divers colours, broiding or binding in the ivy, and is ever of the work of some of the daughters of the family, and veiled over at the top with a fine net of silk and silver : but the substance of it is true ivy, whereof, after it is taken down, the friends of the family are desirous to have some 20 leaf or sprig to keep. The Tirsan cometh forth with all his generation or lineage, the males before him, and the females following him. And if there be a mother from whose body the whole lineage is descended, there is a traverse placed in a loft above on the right hand of the 25 chair, with a private door, and a carved window of glass, leaded with gold and blue, where she sitteth, but is not seen. When the Tirsan is come forth, he sitteth down in the chair, and all the lineage place themselves against the wall, both at his back, and upon the return of the half-pace, 30 in order of their years, without difference of sex, and stand upon their feet. When he is set, the room being always full of company, but well kept, and without disorder, after some pause there cometh in from the lower end of the room a taratan, which is as much as an herald, and on either side 35 of him two young lads, whereof one carrieth their scroll of

their shining yellow parchment, and the other a cluster of grapes of gold, with a long foot or stalk ; the herald and children are clothed with mantles of sea-water green satin, but the herald's mantle is streamed with gold, and hath a
5 train. Then the herald, with three courtesies, or rather inclinations, cometh up as far as the half-pace, and there first taketh into his hand the scroll. This scroll is the king's charter, containing gift of revenue, and many privileges, exemptions, and points of honour granted to the father of
10 the family ; and it is ever styled and directed, to such an one, our well-beloved friend and creditor, which is a title proper only to this case ; for they say, the king is debtor to no man, but for propagation of his subjects. The seal set to the king's charter is the king's image, embossed or
15 moulded in gold. And though such charters be expedited of course, and as of right, yet they are varied by discretion, according to the number and dignity of the family. This charter the herald readeth aloud ; and while it is read, the father or Tirsan standeth up, supported by two of his sons,
20 such as he chooseth. Then the herald mounteth the half-pace, and delivereth the charter into his hand, and with that there is an acclamation by all that are present, in their language, which is thus much, "Happy are the people of Bensalem." Then the herald taketh into his hand from the
25 other child the cluster of grapes, which is of gold, both the stalks and the grapes, but the grapes are daintily enamelled ; and if the males of the family be the greater number, the grapes are enamelled purple, with a little sun set on the top ; if the females, then they are enamelled into a greenish
30 yellow, with a crescent on the top. The grapes are in number as many as there are descendants of the family. This golden cluster the herald delivereth also to the Tirsan, who presently delivereth it over to that son that he had formerly chosen to be in house with him, who beareth it
35 before his father, as an ensign of honour when he goeth in public ever after, and is thereupon called the son of the

vine. After this ceremony ended, the father or Tirsan retireth, and after some time cometh forth again to dinner, where he sitteth alone under the state as before ; and none of his descendants sit with him, of what degree or dignity soever, except he hap to be of Solomon's House. He is 5 served only by his own children, such as are male, who perform unto him all service of the table upon the knee, and the women only stand about him, leaning against the wall. The room below his half-pace hath tables on the sides for the guests that are bidden, who are served with great 10 and comely order ; and toward the end of dinner, which in the greatest feasts with them lasteth never above an hour and a half, there is a hymn sung, varied according to the invention of him that composed it, for they have excellent poetry, but the subject of it is always the praises of Adam, 15 and Noah, and Abraham ; whereof the former two peopled the world, and the last was the father of the faithful : concluding ever with a thanksgiving for the nativity of our Saviour, in whose birth the births of all are only blessed. Dinner being done, the Tirsan retireth again, and having 20 withdrawn himself alone into a place where he maketh some private prayers, he cometh forth the third time to give the blessing, with all his descendants, who stand about him as at the first. Then he calleth them forth one by one, by name, as he pleaseth, though seldom the order of age be 25 inverted. The person that is called, the table being before removed, kneeleth down before the chair, and the father layeth his hand upon his head, or her head, and giveth the blessing in these words : "Son of Bensalem, or daughter of Bensalem, thy father saith it, the man by whom thou hast 30 breath and life speaketh the word ; the blessing of the everlasting Father, the Prince of Peace, and the Holy Dove be upon thee, and make the days of thy pilgrimage good and many." This he saith to every of them : and that done, if there be any of his sons of eminent merit and virtue, so they 35 be not above two, he calleth for them again, and sayeth,

laying his arm over their shoulders, they standing, "Sons, it is well you are born; give God the praise, and persevere to the end"; and withal delivereth to either of them a jewel, made in the figure of an ear of wheat, which they ever after wear in the front of their turban or hat. This done, they fall to music and dances, and other recreations after their manner, for the rest of the day. This is the full order of that feast.

By that time six or seven days were spent, I was fallen into strait acquaintance with a merchant of that city, whose name was Joabin: he was a Jew, and circumcised, for they have some few stirps of Jews yet remaining among them, whom they leave to their own religion, which they may the better do, because they are of a far different disposition from the Jews in other parts. For whereas they hate the name of Christ, and have a secret inbred rancour against the people among whom they live; these contrariwise give unto our Saviour many high attributes, and love the nation of Bensalem extremely. Surely this man of whom I speak, would ever acknowledge that Christ was born of a virgin, and that he was more than a man; and he would tell how God made him ruler of the seraphims which guard his throne: and they call him also the Milken Way, and the Eliah of the Messiah, and many other high names; which, though they be inferior to his Divine Majesty, yet they are far from the language of other Jews. And for the country of Bensalem, this man would make no end of commending it, being desirous, by tradition among the Jews there, to have it believed, that the people thereof were of the generations of Abraham by another son, whom they called Nachoran; and that Moses by a secret cabala ordained the laws of Bensalem, which they now use; and that when the Messiah should come and sit in his throne at Jerusalem, the king of Bensalem should sit at his feet, whereas other kings should keep at a great distance. But yet, setting aside these Jewish dreams, the man was a wise man and learned, and of great policy, and excellently

seen in the laws and customs of that nation. Amongst other discourses, one day I told him, I was much affected with the relation I had from some of the company, of their custom in holding the feast of the family, for that methought I had never heard of a solemnity wherein nature did so much 5 preside. And I desired to know of him what laws and customs they had concerning marriage, and whether they kept marriage well. To this he said, "You have reason to commend that excellent institution of the feast of the family ; and indeed we have experience that those families 10 that are partakers of the blessings of that feast do flourish and prosper ever after in an extraordinary manner. But hear me now, and I will tell you what I know. You shall understand that there is not under the heavens so chaste a nation as this of Bensalem : it is the virgin of the world : 15 for there is nothing amongst mortal men more fair and admirable than the chaste minds of this people. And their usual saying is, that whosoever is unchaste cannot reverence himself. And they say, that the reverence of a man's self is, next religion, the chiefest bridle of all vices. They have 20 also many wise and excellent laws touching marriage. They allow no polygamy. Marriage without consent of parents they do not make void, but they mulct it in the inheritors ; for the children of such marriages are not admitted to inherit above a third part of their parent's inheritance." 25

And as we were thus in conference, there came one in a rich huke, that spake with the Jew ; whereupon, he turned to me, and said, " You will pardon me, for I am commanded away in haste." The next morning he came to me again, joyful, as it seemed, and said, " There is word come to the governor 30 of the city, that one of the fathers of Solomon's House will be here this day seven-night ; we have seen none of them this dozen years. His coming is in state, but the cause of his coming is secret. I will provide you and your fellows of a good standing to see his entry." I thanked him, and told 35 him, " I was most glad of the news."

The day being come, he made his entry. He was a man of middle stature and age, comely of person, and had an aspect as if he pitied men. He was clothed in a robe of fine black cloth, with wide sleeves and a cape : his under-
5 garment was of excellent white linen down to the foot, girt with a girdle of the same, and a sindon or tippet of the same about his neck : he had gloves that were curious, and set with stone, and shoes of peach-coloured velvet ; his neck was bare to the shoulders ; his hat was like a helmet or Spanish
10 montera, and his locks curled below it decently,—they were of colour brown : his beard was cut round, and of the same colour with his hair, somewhat lighter. He was caried in a rich chariot, without wheels, litter-wise, with two horses at either end, richly trapped in blue velvet, embroidered, and
15 two footmen on either side in the like attire. The chariot was all of cedar, gilt, and adorned with crystal, save that the fore-end had panels of sapphires set in borders of gold, and the hinder end the like of emeralds of the Peru colour. There was also a sun of gold, radiant upon the top,
20 in the midst ; and on the top before a small cherub of gold, with wings displayed. The chariot was covered with cloth of gold, tissued upon blue. He had before him fifty attendants, young men all, in white satin loose coats up to the mid-leg, and stockings of white silk, and shoes of blue velvet,
25 and hats of blue velvet, with fine plumes of divers colours set round like hatbands. Next before the chariot went two men bareheaded, in linen garments down to the foot, girt, and shoes of blue velvet, who carried the one a crosier, the other a pastoral staff, like a sheep-hook : neither of them of metal,
30 but the crosier of balm-wood, the pastoral staff of cedar. Horsemen he had none, neither before nor behind his chariot, as it seemeth, to avoid all tumult and trouble. Behind his chariot went all the officers and principals of the companies of the city. He sat alone upon cushions of a kind of
35 excellent plush, blue, and under his foot curious carpets of silk of divers colours, like the Persian, but far finer. He

held up his bare hand as he went, as blessing the people, but in silence. The street was wonderfully well kept ; so that there was never an army had their men stand in better battle-array than the people stood. The windows likewise were not crowded, but every one stood in them as if they 5 had been placed. When the show was past, the Jew said to me, "I shall not be able to attend you as I would, in regard of some charge the city hath laid upon me, for the entertaining of this great person."

Three days after, the Jew came to me again, and said, "Ye 10 are happy men ! for the father of Solomon's House taketh knowledge of your being here, and commanded me to tell you, that he will admit all your company to his presence, and have private conference with one of you that ye shall choose ; and for this hath appointed the day next after 15 to-morrow. And, because he meaneth to give you his blessing, he hath appointed it in the forenoon."

We came at our day and hour, and I was chosen by my fellows for the private access. We found him in a fair chamber, richly hung, and carpeted under-foot, without any 20 degrees to the state. He was seated upon a low throne, richly adorned, and a rich cloth of state over his head, of blue satin, embroidered. He was alone, save that he had two pages of honour, on either hand, one finely attired in white. His under-garments were the like that we saw him wear in 25 the chariot ; but instead of his gown, he had on him a mantle, with a cape of the same fine black, fastened about him. When we came in, as we were taught, we bowed low at our first entrance ; and when we were come near his chair, he stood up, holding forth his hand ungloved, and in 30 posture of blessing ; and we every one of us stooped down and kissed the hem of his tippet. That done, the rest departed, and I remained. Then he warned the pages forth of the room, and caused me to sit down beside him, and spake to me thus in the Spanish tongue :—

"God bless thee, my son, I will give thee the greatest

jewel I have : for I will impart unto thee, for the love of God and men, a relation of the true state of Solomon's House. Son, to make you know the true state of Solomon's House, I will keep this order :—first, I will set forth unto 5 you the end of our foundation ; secondly, the preparations and instruments we have for our works ; thirdly, the several employments and functions whereto our fellows are assigned ; and fourthly, the ordinances and rites which we observe.

“ The end of our foundation is the knowledge of causes and 10 secret motions of things, and the enlarging of the bounds of human empire, to the effecting of all things possible.

“ The preparations and instruments are these. We have large and deep caves of several depths : the deepest are sunk six hundred fathoms, and some of them are digged and made 15 under great hills and mountains ; so that if you reckon together the depth of the hill and the depth of the cave, they are some of them above three miles deep : for we find that the depth of a hill and the depth of a cave from the flat is the same thing, both remote alike from the sun and 20 heaven's beams and from the open air. These caves we call ‘the lower region,’ and we use them for all coagulations, indurations, refrigerations, and conservations of bodies. We use them likewise for the imitation of natural mines, and the producing also of new artificial metals, by compositions and 25 materials which we use and lay there for many years. We use them also sometimes, which may seem strange, for curing of some diseases, and for prolongation of life in some hermits that choose to live there, well accommodated of all things necessary, and, indeed, live very long ; by whom also we 30 learn many things.

“ We have burials in several earths, where we put divers cements, as the Chinese do their porcelain ; but we have them in greater variety, and some of them finer. We also have great variety of composts and soils for making of the earth 35 fruitful.

“ We have high towers, the highest about half a mile in

height, and some of them likewise set upon high mountains; so that the advantage of the hill with the tower is, in the highest of them, three miles at least. And these places we call the upper region, accounting the air between the high places and the low as a middle region. We use these towers, 5 according to their several heights and situations, for insulation, refrigeration, conservation, and for the view of divers meteors; as winds, rain, snow, hail, and some of the fiery meteors also. And upon them, in some places, are dwellings of hermits, whom we visit sometimes, and instruct what to 10 observe.

" We have great lakes, both salt and fresh, whereof we have use for the fish and fowl. We use them also for burials of some natural bodies; for we find a difference in things buried in earth, or in air below the earth, and things buried 15 in water. We have also pools of which some do strain fresh water out of salt, and others by art do turn fresh water into salt. We have also some rocks in the midst of the sea, and some bays upon the shore for some works wherein are required the air and vapour of the sea. We have likewise 20 violent streams and cataracts, which serve us for many motions; and likewise engines for multiplying and enforcing of winds, to set also agoing divers motions.

" We have also a number of artificial wells and fountains, made in imitation of the natural sources and baths; as 25 tinted upon vitriol, sulphur, steel, brass, lead, nitre, and other minerals. And again, we have little wells for infusions of many things, where the waters take the virtue quicker and better than in vessels or basins. And amongst them we have a water which we call 'water of paradise,' being by 30 that we do to it made very sovereign for health and prolongation of life.

" We have also great and spacious houses, where we imitate and demonstrate meteors, as snow, hail, rain, some artificial rains of bodies, and not of water, thunders, lightnings: also 35 generations of bodies in air, as frogs, flies, and divers others.

" We have also certain chambers, which we call 'chambers of health,' where we qualify the air, as we think good and proper for the cure of divers diseases, and preservation of health.

- 5 " We have also fair and large baths, of several mixtures, for the cure of diseases, and the restoring of man's body from arefaction; and others for the confirming of it in strength of sinews, vital parts, and the very juice and substance of the body.
- 10 " We have also large and various orchards and gardens, wherein we do not so much respect beauty as variety of ground and soil, proper for divers trees and herbs; and some very spacious, where trees and berries are set, whereof we make divers kinds of drinks, besides the vineyards. In these
- 15 we practise likewise all conclusions of grafting and inoculating, as well of wild trees as fruit-trees, which produceth many effects. And we make, by art, in the same orchards and gardens, trees and flowers to come earlier or later than their seasons, and to come up and bear more speedily than by
- 20 their natural course they do; we make them also, by art, much greater than their nature, and their fruit greater and sweeter, and of differing taste, smell, colour, and figure from their nature; and many of them we so order that they become of medicinal use.
- 25 " We have also means to make divers plants rise by mixtures of earths without seeds; and likewise to make divers new plants differing from the vulgar, and to make one tree or plant turn into another.

" We have also parks and inclosures of all sorts of beasts
30 and birds; which we use not only for view or rareness, but likewise for dissections and trials, that thereby we may take light what may be wrought upon the body of man; wherein we find many strange effects; as, continuing life in them, though divers parts, which you account vital, be perished and
35 taken forth; resuscitating of some that seem dead in appearance, and the like. We try also poisons and other medicines

upon them, as well of surgery as physic. By art likewise we make them greater or taller than their kind is, and contrariwise dwarf them and stay their growth; we make them more fruitful and bearing than their kind is, and contrariwise barren and not generative. Also we make them differ in 5 colour, shape, activity, many ways. We find means to make commixtures and copulations of divers kinds, which have produced many new kinds, and them not barren, as the general opinion is. We make a number of kinds of serpents, worms, flies, fishes, of putrefaction; whereof some are ad- 10 vanced in effect to be perfect creatures, like beasts or birds, and have sexes, and do propagate. Neither do we this by chance, but we know beforehand of what matter and com- mixture, what kind of those creatures will arise.

" We have also particular pools where we make trials upon 15 fishes, as we have said before of beasts and birds.

" We have also places for breed and generation of those kinds of worms and flies which are of special use, such as are with you, your silkworms and bees.

" I will not hold you long with recounting of our brew- 20 houses, bakehouses, and kitchens, where are made divers drinks, breads, and meats, rare and of special effects. Wines we have of grapes, and drinks of other juice, of fruits, of grains, and of roots; and of mixtures with honey, sugar, manna, and fruits dried and decocted; also of the tears, 25 or woundings of trees, and of the pulp of canes. And these drinks are of several ages, some to the age or last of forty years. We have drinks also brewed with several herbs and roots and spices, yea, with several fleshes and white-meats; whereof some of the drinks are such, as they are in effect 30 meat and drink both, so that divers, especially in age, do desire to live with them, with little or no meat or bread. And above all, we strive to have drinks of extreme thin part, to insinuate into the body, and yet without all biting, sharp- ness, or fretting; insomuch as some of them put upon the 35 back of your hand will, with a little stay, pass through to

the palm, and yet taste mild to the mouth. We have also waters which we ripen in that fashion as they become nourishing, so that they are indeed excellent drink; and many will use no other. Breads we have of several grains, 5 roots, and kernels; yea, and some of flesh and fish dried, with divers kinds of leavenings and seasonings; so that some do extremely move appetites; some do nourish so, as divers do live on them, without any other meat, who live very long. So for meats we have some of them so beaten and made 10 tender and mortified, yet without all corrupting, as a weak heat of the stomach will turn them into good chylus, as well as a strong heat would meat otherwise prepared. We have some meats also, and breads and drinks, which taken by men enable them to fast long after; and some other that used 15 make the very flesh of men's bodies sensibly more hard and tough, and their strength far greater than otherwise it would be.

“We have dispensaries, or shops of medicine, wherein you may easily think, if we have such variety of plants and 20 living creatures more than you have in Europe, for we know what you have, the simples, drugs, and ingredients of medicines must likewise be in so much the greater variety. We have them likewise of divers ages, and long fermentations. And for their preparations, we have not only all manner 25 of exquisite distillations and separations, and especially by gentle heats, and percolations, through divers strainers, yea, and substances; but also exact forms of composition, whereby they incorporate almost as they were natural simples.

30 “We have also divers mechanical arts which you have not, and stuffs made by them; as papers, linens, silks, tissues, dainty works of feathers of wonderful lustre, excellent dyes, and many others; and shops likewise as well for such as are not brought into vulgar use amongst us, 35 as for those that are. For you must know, that of the things before recited many are grown into use throughout

the kingdom ; but yet, if they did flow from our invention, we have of them also for patterns and principles.

"We have also furnaces of great diversities, and that keep great diversity of heats, fierce and quick, strong and constant, soft and mild, blown, quiet, dry, moist, and the 5 like. But, above all, we have heats in imitation of the sun's and heavenly bodies' heats, that pass divers inequalities, and, as it were, orbs, progresses, and returns, whereby we may produce admirable effects. Besides we have heats of dungs, and of bellies and maws of living creatures, and of 10 their bloods and bodies ; and of hays and herbs laid up moist ; of lime unquenched, and such like. Instruments, also, which generate heat only by motion ; and further, places for strong isolations ; and, again, places under the earth which by nature or art yield heat. These divers 15 heats we use as the nature of the operation which we intend requireth.

"We have also perspective-houses, where we make demonstration of all lights and radiations, and of all colours ; and of things uncoloured and transparent, we can represent unto you all several colours, not in rainbows, as it is in gems and prisms, but of themselves single. We represent, also, all multiplications of light, which we carry to great distance, and make so sharp as to discern small points and lines ; also all colorations of light, all delusions and 25 deceipts of the sight, in figures, magnitudes, motions, colours ; all demonstrations of shadows. We find, also, divers means yet unknown to you of procuring of light originally from divers bodies. We procure means of seeing objects afar off, as in the heavens, and remote places ; and represent 30 things near as afar off, and things afar off as near, making feigned distances. We have also helps for the sight far above spectacles and glasses in use. We have also glasses and means to see small and minute bodies perfectly and distinctly, as the shapes and colours of small flies and 35 worms, grains and flaws in gems, which cannot otherwise

be seen ; observations in urine and blood, not otherwise to be seen. We make artificial rainbows, halos, and circles about light. We represent also all manner of reflections, refractions, and multiplication of visual beams of objects.

5 "We have also precious stones of all kinds, many of them of great beauty, and to you unknown ; crystals likewise, and glasses of divers kinds, and amongst them some of metals vitrified, and other materials, besides those of which you make glass. Also a number of fossils, and imperfect minerals which you have not ; likewise loadstones of prodigious virtue, and other rare stones both natural and artificial.

10 "We have also sound-houses, where we practise and demonstrate all sounds and their generation. We have harmonies, which you have not, of quarter-sounds, and lesser slides of sounds ; divers instruments likewise to you unknown, some sweeter than any you have ; with bells and rings that are dainty and sweet. We represent small sounds as great and deep, likewise great sounds extenuate and sharp. We make divers tremblings and warbling of sounds, which in their original are entire ; we represent and imitate all articulate sounds and letters, and the voices and notes of beasts and birds. We have certain helps, which set to the ear do further the hearing greatly. We have also divers strange and artificial echoes reflecting the voice many times, and as it were tossing it ; and some that give back the voice louder than it came, some shriller, and some deeper ; yea, some rendering the voice differing in the letters or articulate sounds from that they receive. We have also means to convey sounds in trunks and pipes in strange lines and distances.

15 "We have also perfume-houses, wherewith we join also practises of taste ; we multiply smells, which may seem strange ; we imitate smells, making all smells to breathe out of other mixtures than those that give them. We make divers imitation of taste likewise, so that they will deceive

any man's taste. And in this house we contain also a con-fiture-house, where we make all sweetmeats dry and moist, and divers pleasant wines, milks, broths, and salads, in far greater variety than you have.

" We also have engine-houses, where are prepared engines 5 and instruments for all sorts of motions. There we imitate and practise to make swifter motions than any you have, either out of your muskets, or any engine that you have ; and to make them and multiply them more easily, and with small force, by wheels and other means ; and to make them 10 stronger and more violent than yours are, exceeding your greatest cannons and basilisks. We represent also ordnance and instruments of war, and engines of all kinds ; and likewise new mixtures and compositions of gunpowder, wildfires burning in water, and unquenchable ; also fireworks 15 of all variety, both for pleasure and use. We imitate also flights of birds : we have some degrees of flying in the air : we have ships and boats for going under water, and brooking of seas : also swimming-girdles and supporters. We have divers curious clocks, and other like motions of 20 return, and some perpetual motions. We imitate also motions of living creatures by images of men, beasts, birds, fishes, and serpents : we have also a great number of other various motions, strange for quality, fineness, and subtilty.

" We have also a mathematical house, where are represented 25 all instruments, as well of geometry as astronomy, exquisitely made.

" We have also houses of deceit of the senses, where we represent all manner of feats of juggling, false apparitions, impostures, and illusions and their fallacies. And surely 30 you will easily believe that we that have so many things truly natural, which induce admiration, could in a world of particulars deceive the senses, if we would disguise those things, and labour to make them more miraculous. But we do hate all impostures and lies, insomuch as we have 35 severely forbidden it to all our fellows, under pain of

ignominy and fines, that they do not show any natural work or thing adorned or swelling, but only pure as it is, and without all affectation of strangeness.

“These are, my son, the riches of Solomon’s House.

5 “For the several employments and offices of our fellows, we have twelve that sail into foreign countries under the names of other nations, for our own we conceal, who bring us the books and abstracts, and patterns of experiments of all other parts. These we call ‘merchants of light.’

10 “We have three that collect the experiments which are in all books. These we call ‘predators.’

“We have three that collect the experiments of all mechanical arts, and also of liberal sciences, and also of practices which are not brought into arts. These we call 15 ‘mystery men.’

“We have three that try new experiments, such as themselves think good. These we call ‘pioneers’ or ‘miners.’

“We have three that draw the experiments of the former four into titles and tables, to give the better light for the 20 drawing of observations and axioms out of them. These we call ‘compilers.’

“We have three that bend themselves, looking into the experiments of their fellows, and cast about how to draw out of them things of use and practice for man’s life and 25 knowledge, as well for works as for plain demonstration of causes, means of natural divinations, and the easy and clear discovery of the virtues and parts of bodies. These we call ‘dowry men,’ or ‘benefactors.’

“Then, after divers meetings and consults of our whole 30 number, to consider of the former labours and collections, we have three that take care out of them to direct new experiments of a higher light, more penetrating into nature than the former. These we call ‘lamps.’

“We have three others that do execute the experiments 35 so directed, and report them. These we call ‘inoculators.’

“Lastly, we have three that raise the former discoveries

by experiments into greater observations, axioms, and aphorisms. These we call ‘interpreters of nature.’

“We have also, as you must think, novices and apprentices, that the succession of the former employed men do not fail ; besides a great number of servants and attendants, men and 5 women. And this we do also ; we have consultations which of the inventions and experiences which we have discovered shall be published, and which not ; and take all an oath of secrecy for the concealing of those which we think meet to keep secret, though some of those we do reveal sometimes 10 to the state, and some not.

“For our ordinances and rites, we have two very long and fair galleries. In one of these we place patterns and samples of all manner of the more rare and excellent inventions ; in the other we place the statues of all principal 15 inventors. There we have the statue of your Columbus, that discovered the West Indies ; also the inventor of ships ; your monk that was the inventor of ordnance and of gunpowder ; the inventor of music ; the inventor of letters ; the inventor of printing ; the inventor of observations of 20 astronomy ; the inventor of works in metal ; the inventor of glass ; the inventor of silk of the worm ; the inventor of wine ; the inventor of corn and bread ; the inventor of sugars ; and all these by more certain tradition than you have. Then we have divers inventors of our own, of 25 excellent works, which, since you have not seen, it were too long to make descriptions of them ; and besides, in the right understanding of those descriptions you might easily err. For upon every invention of value, we erect a statue to the inventor, and give him a liberal and honourable 30 reward. These statues are some of brass ; some of marble and touchstone ; some of cedar, and other special woods gilt and adorned ; some of iron ; some of silver ; some of gold.

“We have certain hymns and services, which we say daily of laud and thanks to God for his marvellous works : 35 and forms of prayers imploring his aid and blessing for the

illumination of our labours, and the turning them into good and holy uses.

“ Lastly, we have circuits or visits of divers principal cities of the kingdom, where, as it cometh to pass, we do
5 publish such new profitable inventions as we think good. And we do also declare natural divinations of diseases, plagues, swarms of hurtful creatures, scarcity, tempests, earthquakes, great inundations, comets, temperature of the year, and divers other things ; and we give counsel there-
10 upon what the people shall do for the prevention and remedy of them.”

And when he had said this, he stood up : and I, as I had been taught, kneeled down, and he laid his right hand upon my head, and said, “ God bless thee, my son, and God bless
15 this relation which I have made ; I give thee leave to publish it for the good of other nations, for we here are in God’s bosom, a land unknown.” And so he left me, having assigned a value of about two thousand ducats for a bounty to me and my fellows ; for they give great largesses where
20 they come upon all occasions.

(The rest was not perfected.)

NOTES.

Page 1. New Atlantis. Atlantis, according to ancient tradition, was a large island situated to the West of the Pillars of Hercules (Straits of Gibraltar). It was a country of great natural beauty, inhabited by a rich and powerful people, who invaded Europe, but were defeated by the Greeks. On account of the vice of the people, the island was swallowed up by an earthquake in a day and a night. The legend is related by Plato in the *Timaeus*, and is said to have been told to Solon by an Egyptian priest. The belief may have originated in the visit of some early explorer to the Canary Islands or the Azores, though some writers think that it betokens a dim knowledge of the Western Hemisphere. The Atlantic Ocean takes its name from this legendary island.

Francis, Lord Verulam, Viscount St. Albans, the full and proper title of the writer, who, however, is generally known as 'Lord Bacon.'

Line 2. for the interpreting of nature, i.e. for the investigation of natural phenomena and *not* dealing with political subjects.

1. 4. **Solomon's House.** The reason for the name is fully explained on p. 20.

1. 9. See Introduction, p. xvi., par. 4.

1. 11. his desire. 'Although it would have pleased him to frame a set of laws for a perfect and ideal commonwealth, he preferred, his time being limited, to devote his leisure to the science of nature, to which he was far more inclined.'

1. 15. **W. Rawley**, 1588-1667, the 'learned chaplain' of Bacon. Educated at Cambridge and became Fellow of his College. In 1612 he was appointed Rector of Bowthorpe, and in 1618 became amanuensis and chaplain to Bacon and remained with him till his death. After his patron's death, he undertook an edition of his works, including several which had not been previously published. In 1627 the *Sylva Sylvarum* was issued, to which the *New Atlantis* was appended with the prefatory note here

given. He was chaplain to Charles I. and Charles II., but attained no high position in the Church. He died at Landbeach.

1. 17. **South Sea**, the name by which the Pacific Ocean was commonly known till the end of last century.

1. 19. **winds ..soft and weak**. Sailing from Peru westward, a vessel would sail with the Trade Winds, which deserve the epithets applied to them.

1. 20. **came about**, *i.e.* changed in direction and blew from the west against them.

Page 2, l. 2. sometimes in purpose, sometimes made up our minds, entertained the idea.

1. 4. **with a point east**. The compass circle is divided into 32 points or divisions, each being an angle of $11\frac{1}{4}$ degrees. The direction of the wind made an angle of $11\frac{1}{4}$ degrees with the line due south.

1. 4. **for all**, etc., in spite of all.

1. 5. **north**. The north Pacific was then unexplored, and therefore was a suitable position in which to place a fancied island.

1. 8. **without victuals**. This is a serious slip on the author's part. He says (1-18) they were provisioned for twelve months, and as only five had elapsed they could hardly have been in the state described.

1. 10. *Psalm* cvii. 24.

1. 12. **discovered**, *i.e.* uncovered. The word has changed its meaning. *To discover* now means to arrive at a new fact either by accident or after search.

1. 15. **kenning**, sight, ken, view, range of vision.

"They related that the seres were within their kenning."
Holland.

1. 19. See note on l. 5.

1. 23. **boscage**, woods (Fr. *bocage*), grove, coppice, from Low Latin, *boscagium*, a thicket.

"The sombre boscage of the wood." Tennyson.

1. 28. **offered**, attempted, made preparations.

1. 29. **baston**, a heavy staff. A commoner form of the word is *batoon*. (French, *bâton*. Low Latin, *basto*).

1. 32. **discomforted**, made uneasy, since they were ignorant of the intentions of the people.

1. 33. **advising**, taking mutual advice. We generally use the word to signify the advice one gives to another.

1. 34. **made forth**, came forth.

l. 36. **blue** seems to have been a favourite colour with Bacon. See also p. 4, l. 4; p. 6, l. 6; p. 8, l. 21; p. 23, l. 27; p. 30, ll. 25 and 35; p. 31, l. 22.

Page 3, l. 5. **writing-tables**, writing tablets of ivory or bone, used when paper was not so cheap as it now is.

l. 8. **of the school.** Correct Classical Latin, such as was then taught in the schools.

l. 13. **which belongeth to mercy**, such assistance as common humanity and kindness would require to be given.

l. 19. **denial**, forbidding.

l. 20. **had**, had knowledge of, knew.

l. 22. **instrument**, i.e. the parchment mentioned above.

l. 29. **in particular**, in detail.

l. 33. **pistolets**, the diminutive of *pistole*, a Spanish gold coin of the value of 16s.

“Ho, Philip! send for charity the Mexican pistoles”
Macaulay, *Ivy*.

Page 4, l. 2. **of place**, of some position and dignity.

l. 3. **water-chamlet**, a rough fabric made of wool and cotton, or of hair and silk, with a wavy or variegated surface. “To make a *chamlet* draw five lines traced over the rest if your diapering consist of a double line.” (Peacham).

l. 12. **flight-shot**, the distance or flight of a shot. Cf.

“A *bow-shot* from her bower eaves
He rode between the barley sheaves.”

Tennyson, *Lady of Shalott*.

l. 22. **subscription**, (Lat. *sub*, under; *scriptum*, written), the signature on the scroll at first presented to them.

l. 25. A very simple question from such educated people. It was hardly likely that pirates or murderers would have confessed themselves to be such, knowing that refusal of assistance would follow.

l. 30. **notary**, a clerk whose duty it was to record such events.

Page 5, l. 1. **conservator of health**, the medical officer of health to the city, whose duty it would be to prevent the introduction of any contagious disease.

l. 25. **prevented the hour**, come earlier than the hour. This is the correct meaning of the word (Lat. *pre*, before; *venio*, *ventum*, I come). Cf. “Prevent us in all our doings.” The word now means ‘going before’ with the object of stopping or hindering one.

Page 6, l. 4. **The Stranger's-House**, a lazaretto, a place in which strangers were kept in quarantine for a certain period,

usually fourteen to forty days. The three days imposed in this case would be of little use, as many infectious diseases take much longer to develop.

1. 7. **cambric oiled.** Oiled paper or oiled linen was a cheap substitute for glass at a time when that material was expensive.

1. 8. **parlour.** Literally a room for talking (French, *parler*, to speak). Cf. parliament, parley.

1. 15. **having cast it**, i.e. having arranged it.

1. 21. **civilly**, i.e. with simplicity and propriety, quietly and soberly.

1. 22. **dorture**, (more commonly *dortoir*), a sleeping room for several persons, a dormitory, (Lat., *dormitorium*).

Page 7, 1. 9. **collegiate diet**, such food as usually served in colleges for the students.

1. 21. **carriage**, or, as we should say, 'carrying.'

1. 25. **let us know ourselves**, i.e. let us consider our position and what our future line of conduct should be.

1. 27. **whale's belly**. One of the commonest of popular misconceptions. The Old Testament distinctly says God prepared 'a large fish.'—*Jonah*, chapter i., v. 17. The New Testament translation is incorrect.

1. 36. **confusion of face**, i.e. shame.

Page 8, 1. 3. **cloistered**, placed in confinement or seclusion. Usually a cloister is a place of religious seclusion (Lat. *claustrum*, an enclosure). The cloisters in our cathedrals were generally covered passages, surrounding a square garden, where the monks retired for writing or contemplation. The most perfect specimen in England is at Gloucester Cathedral.

1. 4. **to take some taste**, to have an opportunity of judging.

1. 9. **weal**, well-being, welfare.

1. 17. **joy**, etc., we were joyful because our sick improved in health rapidly.

1. 18. **divine pool**. Like the Pool of Bethesda, (*St. John*, chapter v., verses 1-9).

1. 23. **tippet**, a cloth or fur covering for the shoulders, a cape.

1. 29. **avoided**, left or made void. Cf.

"What have you to do here, fellow? Pray you *avoid* the house." Shakespeare, *Cor.*

1. 35. **occasions**, necessities, literally 'what befalls you' (Lat. *ob*, to; *cado*, I fall).

Page 9, 1. 1. **myself**. It is contrary to ordinary rules of modern English that a reflexive pronoun should be the subject of a sentence.

l. 4. **much beforehand**, *i.e.* has a considerable balance of money in hand.

l. 7. **defray you**, *i.e.* defray or pay all your expenses—food, medicine, etc.

l. 9. **your return**, your payment for such merchandise.

l. 12. **make your countenance to fall**, that is ‘disappoint you or cause you sorrow.’

l. 17. **admiring**, wondering at, (Lat. *admiror*.) The word has now changed its meaning.

l. 25. **this happy and holy ground**. They had had little opportunity as yet of judging of this. Having been secluded three days, and having been supplied with every necessity, it was natural they should form a favourable estimation of the country.

l. 32. Certainly a model priest.

Page 10, l. 9. Bensalem. A name formed from analogy with Biblical terms. *Ben*, in Hebrew, means ‘the son of’; *salem*, peace: thus the name would imply ‘the son of peace,’ or ‘the abode of peace.’

l. 16. **entertainment**, utilising or passing.

l. 24. **both parts Christians**, *i.e.* Christians on both sides—the governor and the merchants.

l. 25. **in respect that**, ‘considering that’ or ‘seeing that.’

Page 11, l. 2. not sharp, not clearly defined, soft and diffused.

l. 6. **upon which so strange**. A form of expression not usually used now.

l. 11. **yet so as they might move to go about**. That is, they could change the position, row round and round, but might not enter into the guarded circle.

l. 13. **as in a theatre**, in a semi-circle or curve.

l. 16. **very eye**, the centre of intelligence, the means by which everything is seen, and without which there is darkness. Cf. “The light of the body is the eye.”

l. 23. **grace**, favour, **those of our order**, men holding similar rank to himself in the college.

l. 24. **to discern**, etc. To discriminate as far as is possible for men to do so between miracles—the works of God, works or things produced by Nature, what is made by man’s agency, and what are impostures and illusions. (An *imposture* is something done with the intent to impose upon or deceive. An *illusion* (Lat. *illusio*nem) is a deception of the senses with no intent to deceive. The latter is often the work of Nature, *e.g.* the *mirage* in the desert. If an *illusion* is believed in, it becomes a *delusion*.)

l. 27. **testify**, bear witness (Lat. *testis*, a witness).

1. 33. **prosper**, help forward, bring to good account.

1. 35. **in some part**, i.e. to some extent.

Page 12, l. 11. palm, the emblem of peace.

1. 14. **sindon** (Gk. *sindon*), a wrapper, a piece of linen or cotton, a term sometimes used for a surgical bandage.

1. 15. **canonical**. "Canon also denotes those books of Scripture which are received as inspired and canonical as distinguished from the *Apocrypha*" (Ayliffe). The *Apocrypha* consists of those books which are not regarded as inspired, e.g. *The Book of Tobit*, *The Books of Maccabees*.

1. 17. **Apocalypse**, a revelation, an uncovering. Commonly used for the visions recorded in the last Book of the *Bible*, the *Revelations of St. John*.

1. 30. **gift of tongues**. See 2nd chapter of the *Acts*. The crowd listening to Peter, though they spoke many languages, yet each thought the Apostle was speaking in his own particular speech.

1. 34. **remain**, i.e. remnant, referring to Noah and his family.

1. 35. **apostle** (Gk. *apostello*, I send forth), one sent out.

1. 36. **evangel** (Gk. *eu-angellos*, a messenger of good), a term generally restricted to the authors of the four Gospels.

Page 13, l. 7. conference, i.e. conversation.

1. 13. **the questions are on your part**, it is for you to ask what questions you like.

1. 18. **take the hardness**, be bold enough at the risk of his displeasure.

1. 27. **discoveries and navigations of this last age**. The invention of the mariner's compass revolutionized navigation. In a few years after its introduction, Columbus discovered America, Cabot explored the coast of N. America, Vasco di Gama doubled the Cape of Good Hope and the way to India was opened, and Drake sailed round the world. The 'sea-dogs' of Elizabeth's reign had explored much of North and South America, penetrated to the White Sea, traded with India and the East Indies, and commenced the slave trade from Africa to the New World.

1. 33. "The traveller generally sees and hears more in his wanderings than he can relate to those who stay at home."

Page 14, l. 5. secret conclave (Lat. *conclave*, a room, hall, place that may be locked up; *con*, with, and *clavis*, a key), a place enclosed by the sea.

1. 18. "Yet with looks which shewed that we knew he was but jesting."

1. 24. **conceit**, conception, thought, imagination (Lat. *conceptus*, conceived).

l. 25. **his former speech.** See p. 10, line 11.

l. 33. This refers to the expeditions of Hanno, Pharaoh Necho, Nearchus, etc. Hanno, a Carthaginian navigator, is said to have undertaken a voyage beyond the Pillars of Hercules in order to found Libyphoenician towns. In the reign of Pharaoh Necho, King of Egypt, b.c. 617-601, the Phœnicians in his service according to Herodotus, circumnavigated Africa. Nearchus, an officer of Alexander, conducted the Macedonian fleet from the mouth of the Indus to the Persian Gulf.

Page 15, l. 4. **Phœnicia**, a country of Asia on the coast of Syria; a mountainous strip of land, 10 to 12 miles broad, between the Mediterranean and Mount Lebanon. It contained the great cities of Tyre and Sidon. The Phœnicians were some of the oldest and bravest explorers, and are said to have visited Britain—called the Cassiterides or Tin Islands—to obtain tin and copper.

Tyre, an important port 20 miles south of Sidon. Hiram, King of Tyre, was a friend of Solomon. It was taken and sacked by Alexander in 322 b.c., and never regained its former importance.

l. 5. **Carthaginians**, the people of Carthage, one of the most celebrated cities of the ancient world, which stood near C. Blanco, the northernmost point of Africa. Founded about 853 b.c. Its rivalry with Rome led to the Punic wars, in the second of which Hannibal played an important part. At the end of the third war, b.c. 146, the town was taken and destroyed by the Romans.

l. 7. **Palestine.** This refers to the voyages made in the time of Solomon, when his fleet came once in three years, “bringing ivory, apes, and peacocks.” (2 *Chron.* ix. 21.)

l. 9. **junks**, vessels employed by the Chinese, Japanese, and Malays, with no prominent stem or keel. The immense masts are in one piece, the lug-sails sometimes of matting.

tall ships, *i.e.* large ships.

l. 11. **of great content**, *i.e.* of great tonnage; capable of containing much freight.

l. 12. **sparing memory**, vague accounts, mere traditions handed down.

l. 18. **Chaldeans.** Chaldea was a province of Babylon, about the lower course of the Euphrates, at the head of the Persian Gulf. The word is sometimes used to denote the whole of Babylonia.

l. 20. **stirps** (Lat. *a stock*), family, kindred.

l. 22. **Pillars of Hercules.** Hercules was one of the fabulous heroes of ancient mythology. One of the ‘twelve labours’ set

him to perform was the capture of the oxen of Geryones in Erythia. After traversing various countries he reached at length the frontiers of Libya and Europe, where he erected two pillars (Calpe and Abyla) on the two sides of the Straits of Gibraltar, which were henceforward called the 'Pillars of Hercules.'

1. 25. The expeditions visited the south-east of Asia, the Malay Peninsula, and thence northward to the frontiers of China.

1. 28. **a great man**, *i.e.* Plato, in whose *Critias* all these marvellous descriptions are to be seen.

1. 29. **Neptune**, the chief marine divinity of the Romans, usually depicted as carrying a trident.

1. 34. **scala cœli**, a Jacob's ladder, a ladder to heaven.

Page 16, l. 8. See note on the Title.

1. 15. **clemency** (Lat. *clementia*, mildness, gentleness), mildness of temper and disposition, gentleness, kindness, humanity.

1. 19. **entailed**. Taken in a snare or toils, entrapped, surrounded.

1. 21. **render**, *i.e.* surrender.

1. 29. **little subject to earthquakes**. This is not correct. The mountains of Mexico and the whole line of the Andes in S. America are highly volcanic in character, and earthquakes are of common occurrence.

1. 30. **particular**, *i.e.* local or special.

1. 31. **greater rivers**, *e.g.* Mississippi, Orinoco, Amazon, La Plata, etc.

1. 35. There is a substratum of fact in this account. The basins of the Amazon and Orinoco are subject to annual floods which render many parts uninhabitable.

Page 17, l. 7. **rudeness**, lack of civilization, absence of polite manners. *Not* the same meaning as at present.

1. 11. **universal flood**, *i.e.* the flood of Noah.

1. 14. **savage**, uncivilized, rude, barbarous (Lat. *silvaticus*, belonging to the woods).

1. 16. **civility**, *i.e.* civilization.

ll. 12-17. This theory put forward as to the scanty population of America is altogether untenable. Bacon's mental training prevented him from being a successful romancer. A flood, 40 feet deep, even continuing for a long time, would not depopulate a continent containing numerous plateaux and mountain ranges, and the arts and advantages of civilization once possessed are rarely lost. Again, if the people of America were in a position to send formidable expeditions to Europe and Asia and New Atlantis, they were certainly in advance of Noah in the arts and

science of civilization, and could hardly be a ‘simple and savage people.’

l. 19. **tigers.** The tiger is not a native of America, but this had not been ascertained in Bacon’s time. The jaguar and panther of the New World are the representatives of the tiger in the Old World.

l. 20. **hairy goats.** The llama or alpaca of South America, whose long silky hair is still used in manufactures.

l. 29. **main accident,** i.e. the chief accident, great catastrophe (accident, from Lat. *ac*, to ; *cado*, I fall).

l. 34. **decay,** decrease, diminish (Lat. *de*, down ; *cadere*, to fall).

l. 35. **galleys.** A galley was a low, flat-built vessel with one or more rows of oars, said to have been invented by the Corinthians, 700 B.C. In Bacon’s time, galleys were usually rowed by criminals or prisoners chained to the seats. Charles VI. of France kept 40; they were abolished in France by Louis XV., 1784 A.D. Lying low on the water they were not fitted to stand rough weather.

l. 36. **brook** (A.S. *brucan*, to bear, endure), to endure, stand, tolerate. Cf.

“A thousand more mischances than this one
Have learned me to brook this patiently.”

Shak. *Two Gent.*

Page 18, l. 12. principal question, i.e. why the island had never been heard of in Europe.

l. 18. **inscrutable** (Lat. *inscrutabilis*), incapable of being searched into and understood by inquiry.

l. 20. **substantive,** possessing sufficient substance for the support of the population.

l. 33. **perpetuity,** perpetual continuance.

Page 19, l. 2. doubting novelties and commixtures of manners, ‘Fearing that the introduction of new ideas and manners by foreigners would be detrimental to the country.’

l. 5. The exclusiveness of the Chinese was to a large extent broken down by the forcible opening of the Treaty Ports, and, more recently, by various concessions to European nations.

l. 11. **as reason was,** ‘as politeness and courtesy demanded.’

l. 13. **policy,** the art of government, the line of conduct adopted by the rulers of a State with regard to its foreign or domestic relations.

l. 24. **bottoms,** ships, used by synecdoche for the whole ship. Cf.

“My ventures are not in one bottom trusted.”

Shak. *Mer. of Ven.*

“The most noble bottom of our fleet.”

Twelfth Night.

- l. 31. **pusillanimity**, want of courage or fortitude, faint heartedness.

- l. 36. **pertinent** (Lat. *pertinens*, pertaining), related to the subject in hand.

Page 20, l. 5. **lanthorn**, i.e. lantern, that which gives light.

- l. 10. **denominate**, to take its name from.

- l. 13. ‘from the cedar, etc,’ *vide 1 Kings iv. 32.* “He spake three thousand proverbs: and his songs were a thousand and five. And he spake of trees, from the cedar tree that is in Lebanon even to the hyssop that springeth out of the wall: he spake also of beasts, and of fowl, and of creeping things, and of fishes.”

- l. 16. **symbolize**, to agree, to harmonize, to have a resemblance in qualities or properties (Gk. *sym*, together; *ballo*, I throw).

- l. 33. **several**, separate. The word has changed in meaning.

Page 21, l. 1. **designed**, to which they were sent.

- l. 7. **fraught**, freighted, loaded, laden (p.p. of *frahten* or *fragten*, to load). Cf.

“A vessel of our country richly fraught.” Shakespeare.

- l. 10. **vulgar**, i.e. common (Lat. *vulgaris*, the common people).

- l. 15. **rendezvous**, a place of meeting agreed upon (from Fr. *rendezvous*, betake yourselves).

- l. 19. **commodity of matter**, articles of food, raw material for manufactures, etc.

- l. 24. **probably told**, i.e. told in a manner which convinced the hearers that the facts were probable.

- l. 26. **took us off**, relieved our embarrassment.

- l. 34. **used to offer**, i.e. were in the habit of offering. The same words now would imply that the offer was no longer made.

conditions, favourable terms, material advantages.

- l. 36. **presently**, immediately; not as now, after some time had elapsed. Cf.

“The towns and forts you *presently* have.”

Sidney, *Arcadia*.

Page 22, l. 4. **perdition**, loss, destruction.

- l. 6. **tedder**, tether, that by which one is tied. *Adjacent within our tether* means ‘within the limits which were assigned for our walks.’

- l. 27. This custom is similar to the modern French *conseil de famille*.

- l. 29. **compounded and appeased**, an agreement come to by mutual concessions between the disputing parties.

l. 34. **courses of life**, what professions or occupations they should follow.

Page 23, l. 3. **needeth**, is needed. Used intransitively, in modern speech it is usually transitive.

l. 4. **order of nature**, i.e. they willingly accept the decisions of one who is so much older and naturally wiser than themselves. The patriarchal system of government is common in many parts of the world.

l. 5. **ever**, always.

l. 10. **half-pace**. In the technical language of building this means a raised floor in a bay window. The meaning here is 'a raised platform or dais.'

l. 12. **state**, a canopy, a covering of state. Cf.

"His high throne, which under *state*
Of richest texture spread, at th' upper end
Was placed in regal lustre." Milton, *P.L.* x. 445.

l. 14. **silver asp**, i.e. silver aspen, a common tree, *populus tremula* (trembling poplar), the leaves of which are perpetually quivering. The under surface of the leaf is a silvery green. Cf.

"Willows whiten, aspens quiver."

Tennyson, *Lady of Shalott*.

l. 22. **generation**, those descended from him.

l. 25. **traverse**, a gallery or loft of communication.

l. 27. The reason why the mother should have been placed apart is not clear, since the younger women were introduced with their husbands and brothers. It would seem to us to have been more appropriate that the mother should sit by the side of the father on such an occasion.

l. 30. **at his back**. This could not have been if the chair was placed against the wall (l. 10). The meaning is that they stood in rows on either side.

the return of the half-pace, i.e. the steps or slope leading up to the platform.

Page 24, l. 5. **courtesies**, a movement of reverence or respect, a curtsey, a bow.

l. 9. **exemptions**, freedom from certain taxes or duties.

l. 11. **creditor** (Lat., one who trusts), one to whom something is owing.

l. 12. **proper** (Lat. *proprius*, one's own). The title is specially suitable and appropriate in this case. Cf.

"Conceptions proper only to myself." Shak. *Jul. Caesar*.

l. 14. **king's image**, the face of the king, as we have the Queen's head on coins. Cf. "Whose image and superscription is this?" (*St. Matt.* xxii. 20).

l. 14. **embossed or moulded**, raised in relief above the level of the paper or parchment.

l. 15. **be expedited of course as of right**. These charters are always given, not sometimes bestowed as a favour and sometimes withheld. Each man who attains the position has a right to one.

Page 25, l. 17. **father of the faithful**, a term usually applied to Abraham by the Jews and Mohammedans.

l. 33. **days of thy pilgrimage**, *i.e.* thy life. Life is frequently likened to a journey or pilgrimage towards some goal.

Page 26, l. 10. **strait** (Lat. *strictus*), close, familiar, intimate.
“He had received him into a straight degree of favour.”

Sidney.

l. 15. **they**, *i.e.* the Jews living in other countries.

l. 23. **Elijah**, or Elijah. The promised forerunner of Christ—a position filled by John the Baptist. “Behold I send you Elijah, etc.” (*Malachi* iv. 5).

l. 31. **cabala**, a Hebrew term meaning an occult system of doctrine, or a doctrine given to a small number of persons only. Also applied to the persons receiving such doctrine.

Page 27, l. 1. **seen**, versed, acquainted with.

l. 11. **affected**, etc. Where there is a great desire for an increase in the population, it is usual to allow a man to take several wives. If they specially rewarded a man who had thirty descendants, it was quite natural to expect that a man would be allowed more than one wife.

l. 23. **Ethiop**, *i.e.* Ethiopian—a negro of Central Africa, notably impure livers.

l. 28. **stews**, licensed houses of ill-fame, brothels.

l. 29. **courtezans**, prostitutes.

l. 31. **out of office**, out of repute (Lat. *officium*, a duty).

Page 30, l. 10. **montera** (Lat. *monte*, a mountain), a kind of cap, properly a huntsman’s cap, having a spherical crown and a flap which could be drawn down over the ears.

l. 12. The beard usually is *darker* than the hair.

l. 13. **litter-wise** (Gk. *lectron*, a bed; Lat. *lectus*, *lectaria*; Fr. *litière*), a stretcher with a bed and usually a canopy, commonly used by rich people in ancient times to move from place to place. The bad state of the roads precluded the use of carriages. Horse-litters, such as here described, were common in England in Bacon’s time.

two horses at either end, *i.e.* one in front and one behind.

l. 18. of the Peru colour,
‘emerald green.’

l. 26. Next, used in the cor-

l. 28. **crosier.** The staff or
cross, and generally elaborately carved.

l. 29. **pastoral staff**, the staff of a bishop in the shape of a shepherd's crook, of metal or wood, enriched with metals and jewels, curved at the top and pointed at the bottom.

l. 30. **balm-wood**, the English name for the wood of several trees. The balm of Gilead, a tree growing in Gilead, east of the Jordan, was supposed to have the property of healing wounds.

Page 31, l. 8. charge, i.e. order, injunction, special work.

l. 20. **without any degrees to the state**, i.e. without any steps leading up to the state chair or throne.

Page 32, l. 9. the end of our foundation, i.e. the object of our institution, viz., the scientific study of nature with the idea of increasing the power and knowledge of man.

l. 14. **fathom**, i.e. six feet.

l. 21. **coagulations**, the process of congealing, thickening, clotting, or curding. The white of an egg coagulates in boiling. Elsewhere used by Bacon to mean crystallization.

l. 22. **induration**, the making hard (Lat. *induratio*; from *in* and *durus*, hard).

l. 27. The idea that living in a deep cave would prolong life was fairly common in early times. We know that the deprivation of sunlight and fresh air would have an opposite effect.

l. 30. **learn many things.** It is difficult to understand what could possibly be learned from men living in such a state of seclusion and darkness.

l. 34. **composts**, compositions, mixtures composed of different substances. In this particular the modern science of manuring in agriculture has gone quite as far as here described.

Page 33, l. 6. insolation (Lat. *insolatio*; from *in* and *solus*, the sun), the process of drying or hardening in the rays of the sun.

l. 8. **meteors** (Gk. *meteoros*, raised above the earth), a shooting star, a luminous body appearing in rapid flight across the sky. In a wider sense the term includes all the various phenomena in the sky—the study of which is meteorology.

l. 22. **engines.** The use of the wind as a motive power has long been known. The windmill is the commonest ‘engine’ thus used, either to grind corn or pump water. Nansen used a windmill on the “Fram” to drive a dynamo and generate electricity.

1. 26. **tincted upon**, in modern English, *tinctured with*. Mineral or medicinal springs are very common, and still much used, although we have none with *steel* in solution (many with *iron*, chalybeate) or *brass*, which is an alloy, and not a natural metal.

1. 28. There is no reason why this should be so. The dissolving power of water depends upon its temperature, not upon its position. It must be remembered that chemistry was practically an unknown science at this time.

1. 31. The elixir of life was, like the philosopher's stone, the dream of many an early student of the mysteries of nature. We know now that both are utterly impossible. The only 'elixir' which will prolong life is *temperance*; every other means is as puerile as it is useless.

1. 35. **rains of bodies**. It is doubtful what Bacon here means. Any vapour, if condensed, will fall in drops like rain. Possibly he was thinking of the wonderful and fabulous rains of frogs, mice, etc., which were sometimes reported.

1. 36. **generations of bodies in air**. Another myth of the middle ages—that stagnant air or water generated life, or created it. Rain water, apparently clear, frequently contains thousands of animalculæ, visible through a microscope. Preying on one another, some of them grow until they become sufficiently large to attract notice, and this probably is how the idea arose. The cleverest scientist cannot create the most humble or minute form of life.

Page 34, l. 7. arefaction (Lat. *areo*, to be dry; *facio*, to make), the art of drying. Many diseases of the skin, e.g. scrofula, scurvy, were attributed to *dryness* of the body. The circulation of the blood and its importance with regard to health was then unknown.

1. 15. **grafting**, setting the twig of one tree to grow upon another, commonly done in all gardens, especially with apple and pear trees.

inoculating (Lat. *inoculo*, to graft a bud of one tree upon another). This is the usual manner of dealing with roses. The bud and adjacent bark of one variety is taken, a slit made in the bark of another bush, and the bud and bark slipped into the opening. It is then bound up, and soon commences to grow and unite itself to the new tree.

1. 20. **we make them also**, etc. This is the manner in which all fruit and vegetables have been obtained, e.g. wheat from a wild grass, apples from the crab tree, plums from the wild sloe. Everything suggested in this paragraph is now done in nurseries, greenhouses, and places where horticulture is studied.

1. 25. Another myth. No plant can grow without seed, but in many cases the seeds are so extremely small that they might easily escape detection.

l. 27. **vulgar**, i.e. the common variety.

l. 31. **dissections and trials**. This means that the people practised *vivisection* or experimental surgical operations on living animals.

Page 35, l. 1. surgery (Gk. *cheirourgia*, a working with the hands). The term surgery is applied to the curing of a disease by operation. Medicine, or *physic* (as called here), is the science of curing by drugs, etc.

l. 7. **commixtures and copulations**, cross-breeding. It is quite possible to produce new varieties of an animal by taking parents of different breeds, e.g. a bull terrier is a cross between a bulldog and a fox terrier, and in many cases to develop new and desirable qualities; but there are very few cases of cross breeding between animals of different kinds. ~~The mule is an exception, being a cross between the horse and ass, but a mule does not give birth to a mule, that is, it is barren.~~

l. 10. Another mistake similar to those mentioned before. A piece of meat left to decay is soon a mass of maggots, but they have not developed from the meat, but from the laid by flies upon it, or from minute germs existing before death.

l. 12. To foretell the result of cross-breeding, is a total impossibility.

l. 25. **manna**. The manna used : sweet juice, which exudes from c^r possesses an odour resembling h^c slight acridity.

decoceted (Lat. *de* and *c* boiling or digesting in hot v

tears, or woundings c
seen on plums or plum t

l. 27. **last**, i.e. lasti-

l. 29. **white-meat**
eggs, and the like
made of milk" /
poultry, rabbits, \

l. 33. **extreme t**
than water.

l. 34. **insinuate** (L
enter gently, slowly,

without ... biting.
does, by destroying th

l. 35. **fretting** (A.S. l
away. [N.B.—*Fret* in
A.S. *fraetwan*, to adorn.]

Page 36, l. 2. i.e. ‘which we ripen in such a fashion that,’ etc.

l. 10. **mortified**, i.e. softened and made ready for food. Meat on the verge of putrefaction is more easily digested than newly killed.

l. 11. **chylus** (Gk. *chylōs*, juice), chyle—the fluid of the lacteal vessels, the liquid state into which all food is reduced by digestion before it is absorbed by the stomach and intestines.

l. 21. **simples**, medicinal herbs or medicine obtained from herbs, so called because each vegetable was supposed to possess its particular virtue, and was therefore a ‘simple’ remedy. Cf.

“ Then thou shalt cull me simples, and shalt teach,
My friend, the name, and healing power of each.”

Cowper.

l. 23. **fermentation** (Lat. *serveo*, to boil, to be agitated), an internal motion or boiling of a liquid or constituent parts of a liquid. The term is usually applied now to alcoholic fermentation. sugar is turned into alcohol and carbon dioxide.

drugs supplied at the dispensaries are prepared turning into vapour and then condensing), or different substances, and are then mixed with them they seem to be nearly the same as natural

or manufactures at the present time than Bacon ever imagined.

heat by means of a current of space.

re is no appreciable heat none from the stars.

The meaning here is not possible to construct emitting a particular mode to revolve or which the heat was

decomposition of

a term used for the y shall give unto the and the maw” (*Deut.*

ash lime or quick-lime mount of heat.

1. 20. An anticipation of Newton's discovery of splitting white light up into the primary colours by means of refraction.

1. 28. The electric light and ordinary coal gas were, of course, unknown to Bacon.

1. 29. **means of seeing objects afar off.** The telescope was hardly developed into a practical instrument in Bacon's time. Dr. Dee, 1570, speaks of perspective glasses, and in 1608, Lipperhey, a spectacle maker of Middleburg, offered the Government three instruments "by which one can see to a distance." Galileo soon after constructed the Galilean telescope.

1. 34. **means to see small and minute bodies**, etc. The compound achromatic microscope was not known till the eighteenth century. Single magnifying glasses or double convex lenses have been known for ages.

Page 38, 1. 2. This may be easily done by diffraction gratings.

1. 3. **reflection** is the bending of light back from the surface of a mirror; **refraction**, the altering of direction by passing a ray of light through some transparent substance at an angle less than a right angle.

1. 8. **vitrified** (Lat. *vitrum*, glass; *facio*, to make), fused or melted together like glass.

1. 9. **fossils** (Lat. *fossilis*, dug up), any remains or traces of remains of animals or vegetables which have been buried in the earth by natural causes.

imperfect minerals, i.e. mineral ores.

1. 10. **loadstones** (A.S. *ledan*, to lead), the 'leading' or attracting stone. The magnetic oxide of iron, which is very abundant in nature, and constitutes a natural magnet.

"The power to draw to itself, like the loadstone,
Whatsoever it touches." Longfellow, *Miles Standish*.

1. 14. **generation**, i.e. creation, method of origin.

1. 15. **quarter-sounds**. Intervals in music are called tones and semitones. The suggestion conveyed here that harmonies may be made where the intervals are half a semitone is not practicable.

1. 18. **small sounds**, etc. This is done by the modern microphone.

1. 20. **divers tremblings**, etc., i.e. different sounds or notes are analyzed into constituent parts. This might be possible in some cases, but with musical notes it is impossible. The wave theory of sound was unknown at this time.

1. 22. **voices and notes of beasts and birds**. This was carried to perfection in ancient Greece, where persons could even imitate the nightingale with exactness.

I. 24. The ear trumpet does this to a certain extent.

I. 28. **differing in the letters.** An utter impossibility.

I. 30. **sounds in trunks and pipes.** Speaking tubes are now of very common use.

I. 35. **out of other mixtures, etc.** That is, extracting various odours from substances other than those which usually give them. This is no difficulty to the modern chemist—in many cases, at all events. Very few of the perfumes sold as being extracts from flowers are derived from those flowers.

Page 39, I. 9. with small force. Modern science has shown that it is impossible to multiply or create force; an increase in speed in a machine is always accompanied by a loss of power, and vice versa. Thus, if by an arrangement of cogged wheels the last is made to move ten times as fast as that to which the power is applied, it moves with one-tenth of the power to do work.

I. 12. **basilisk,** a fabulous animal, imagined to be so deadly that its look, and much more its breath, killed. Here an obsolete kind of cannon supposed to resemble the fabulous basilisk in its deadly effects.

I. 15. **wildfires,** a composition of inflammable materials readily catching fire and hard to extinguish—more commonly known as Greek fire, the effects of which are described by Gibbon. It was composed of naphtha, sulphur, pitch, etc., and its method of manufacture kept a secret. It is difficult to see the utility of all these warlike preparations by a people who being so remotely situated, could not anticipate the possibility of war.

I. 17. **flying in the air.** This has been the object of much attention, and has caused the death of many inventors. Flying machines will probably be made in the near future.

I. 18. **boats for going under water.** This, again, is now a possibility, and perhaps an accomplished fact. The French Government are experimenting with a submarine boat.

I. 19. **swimming-girdles and supporters, i.e. life belts and lifebuoys.**

I. 21. **perpetual motions.** To invent a machine which, once started, would work perpetually was a common dream of inventors, hitherto not realized. It is impossible to get rid of the friction of the various parts with one another, or with the air. If gravitation could be nullified the thing would be easy.

I. 28. The senses, and especially sight and hearing, are easily deceived. The ventriloquist, conjurer, etc., do this continually.

I. 32. **admiration, i.e. wonder, astonishment (Lat. admiror, I wonder).**

1. 33. **particulars**, i.e. individual persons.

Page 40, l. 1. **ignominy**, disgrace, shame.

1. 2. **adorned or swelling**. The members of the College were forbidden to make a mystery of any of these things, but if they were exhibited they were to be explained and made clear to the audience.

1. 11. **depredators** (Lat. *depraedor*, to plunder), a copier or plagiarist.

1. 16. The pioneers applied themselves to original research. We should be inclined to think that *they* would be better able to tabulate and analyze their results than another set of men—‘compilers.’

1. 20. **axioms**. An axiom is a self-evident truth, on which arguments or facts are based.

1. 24. **things of use and practice for man's life and knowledge**. The very essence of the Baconian philosophy, as pointed out in the Introduction.

1. 28. **dowry men, or benefactors**, because they gave benefits, or did well for mankind (Lat. *bene*, well; *fatio*, I do).

1. 35. **inoculators**, i.e. experimenters.

Page 41, l. 2. **aphorisms** (Gk. *aphorisma*, a separation, a definition), a short detached pithy sentence, containing a maxim or wise precept, deduced from the general experience of mankind.

[*N.B.*—The arrangements of the staff or departments of the College would not recommend itself to modern scientists. A man is much more likely to do good work, and the advance of science to be more rapid, if he ‘specializes’ or applies himself wholly to one particular branch of knowledge, instead of getting to a certain point and then handing his work on to someone else, as here suggested. The scheme here given would make the staff jacks of all sciences and masters of none.]

1. 3. **novices** (Lat. *novus*, new), beginners, newcomers.

1. 18. **your monk**. Roger Bacon is credited with this invention, to which he alludes in one of his works, 1267 A.D. A German monk, Schwartz, about 1336, is said to have discovered the method of its manufacture.

1. 19. **the inventor of music**. In this case, as in the case of ‘letters,’ ‘observations in astronomy,’ ‘works in metals,’ ‘wine,’ ‘corn and bread,’ ‘sugars,’ mentioned below, it would be impossible to single one man out as the *inventor*, since such things are either a common property of all men in all times, or have gradually come into use after generations of experiments. Tubal Cain (*Genesis* iv. 22) is described as “an instructor of every artificer in brass and iron,” but even he could hardly have

'invented' brass and iron. Music, again, has been known in all times to all peoples. The expression of feeling in song is rather an instinct than an art.

1. 20. **the inventor of printing.** The art of printing from solid engraved blocks is attributed to the Chinese about 593 A.D. The use of separate types was invented by Guttenberg, of Mentz, about 1450 A.D. In company with Faust and others he printed several books from wooden type. Shortly afterwards the use of cut metal type was introduced.

1. 21. **the inventor of glass.** Glass was known in Egypt and represented on the monuments as early as B.C. 1740. Remains have been found in ruins not merely of Egyptian but of Assyrian, Greek, Roman, and Etruscan cities. Pliny mentions an instance of some mariners who made a fire on the sandy shore, using blocks of soda or salt for a grate, with the result that the heat fused the sand and salt together and produced glass, which then 'for the first time became known'; but this could not have been the first time.

1. 22. **inventor of silk of the worm,** i.e. the inventor or first user of the silk from the silkworm. The Chinese seem to have led the way in the rearing of the silkworm. The first Greek writer who mentions it is Aristotle (B.C. 384-322). In A.D. 551 two Persian monks resident in China were encouraged by Justinian to carry off the eggs of the moth to Constantinople. They were successful, and thus the new industry was introduced into Europe. Introduced into Sicily 1146, Spain 1253, Lyons 1521, and into England in 1585.

1. 32. **touchstone,** i.e. basanite, a velvet-black siliceous or flinty jasper. If an alloyed metal be rubbed across it, the colour left behind will indicate the nature and depth of the alloy—hence the name of 'touch' stone.

1. 35. **laud** (Lat. *laus, laudis*, praise), praise, thanksgiving.

Page 42, l. 6. natural divinations of diseases, i.e. examine and find out the natural causes of, etc.

1. 18. **ducat**, a coin so called because first coined in the Duchy of Apulia. It was a favourite coin with the Dutch. It was of various values, but generally about 7s. 4d.

1. 19. **largesses** (Fr. *largette*, from Lat. *largitia*, from *largior*, to bestow), a present, a gift, or a bounty from superiors to inferiors.

1. 21. **perfected,** i.e. finished.

